

GUIDELINES FOR DATA COLLECTION, MONITORING
AND EVALUATION PLANS
FOR A.I.D. ASSISTED PROJECTS

A.I.D. PROGRAM DESIGN AND
EVALUATION METHODOLOGY REPORT NO. 9
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by

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Bringing together a group of people who actively engage in discussion about what a program is doing, where it is going, how it could be improved, and what information is needed to reduce uncertainty about program implementation and effects -- these processes are in themselves change producing Therein lies the power of evaluation . . . in the mobilization of individual energies for action The barrier of uncertainty is attacked . . . and systematic information emerges to increase programmatic effectiveness.

Michael Quinn Patton
Utilization-Focused Evaluation, 1978

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FOREWORD

These guidelines were written by the evaluation staff in A.I.D.'s Bureau for Asia and the Near East. They respond to the needs of project management for practical ways of getting useful information about progress and effects to help managers guide projects toward the achievement of development objectives. They call for an active and flexible use of this information during implementation. The guidelines provide examples of how project managers can identify their specific information needs at various stages, secure this information in a timely way, and use both continuous and ad hoc data collection and analysis to support interim and final evaluation of projects.

These needs are not unique to project managers in one geographic region, but exist in all of our Missions and offices responsible for implementing projects. Our counterpart managers will also find the approach taken in these guidelines helpful. We often find ourselves confronting a problem of too many reports and too much data, but very little management-useful information.

The guidelines offer a way to overcome this problem. We are, therefore, publishing the guidelines for Agencywide use. We hope that they will not only have immediate utility, but also will provide a basis for further development of appropriate information systems and techniques for data collection for monitoring and evaluation.

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throughout the Bureau for Asia and the Near East and for the new policy requirements needed to ensure that data collection becomes an integral element of Bureau projects. Former Deputy Assistant Administrator Eugene Staples, presently USAID Mission Director in Pakistan, repeatedly emphasized to Bureau staff the importance of understanding "the effects of our projects on people" and in this way stimulated Bureau thinking about ways to collect this information.

Barry Sidman, Director of the Bureau's Office of Development Planning, provided thoughtful organizational and substantive comments on this and earlier drafts and continually challenged our thinking about practical ways to document project effects. This paper would not have been written without the support of John Westley, former Director of the Office of Development Planning and currently USAID Mission Director in Bangladesh, who constantly urged us to get away from office operational tasks and to get on with writing it, and who provided numerous and extremely helpful comments on earlier drafts. Larry Crandall, A.I.D. Representative for Afghanistan Affairs, was supportive and helpful in sensitizing Bureau staff concerning the need for project data.

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We are indebted to Dr. Alexander Kornis, Senior Economist at the U.S. Department of Commerce, Bureau of Economic Analysis, for his thoughtful insights concerning the obstacles to developing useful data collection, monitoring, and evaluation systems, as well as his extremely helpful organizational recommendations.

Our colleagues at the International Statistical Program Center of the U.S. Bureau of Census, Mick Hartz, James Gibbs, and Robert Magnani, provided very useful comments on earlier drafts, based on the lessons they have learned and the extensive experience they have in data collection and analysis in developing countries. Mick Hartz's paper, "Lessons Learned in Evaluating A.I.D. Development Project Impacts," provided helpful insights into the problems associated with A.I.D. project data collection.

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PREFACE

For many years A.I.D. has sought ways to make evaluation useful to managers. Ideally, evaluations were to be used in project decision-making and program planning. Yet many managers found that evaluations failed to provide useful, timely, or relevant information for effective management.

These guidelines are a useful step toward making evaluation a genuine management tool. They were written to give managers ideas and resource materials to help them design the information systems they need to manage their projects effectively.

Several themes in the pages that follow reflect a concern for managers' information needs. These themes emphasize the following:

- Information gathering for Mission management decision making rather than for "grading" the project by A.I.D. /Washington
- Internal data gathering and analysis rather than external evaluation
- Information gathering strategies as integral elements of project design rather than as an afterthought
- Regular, small-scale data gathering and analysis efforts for rapid feedback for managers rather than elaborate, costly, and time-consuming research studies

It is important that A.I.D. build a body of experience in this area. We should understand how data are to be used for planning purposes if we hope to assist in building rational and programmatic planning capacities among our counterparts--an essential element in the broader development process.

Additional copies of this document can be obtained from the Asia and Near East Bureau, Office of Development Planning or from the Center for Development Information and Evaluation, Office of Development Information and Utilization.

Barry Sidman
Director
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SUMMARY

Purpose

These guidelines were written to help managers obtain the project performance data they need for effective and informed management decision-making. They are based on the principle that effective managers should have empirical data on purpose and goal achievement, as well as on input and output progress, throughout implementation to make informed decisions and to knowledgeably guide their projects. This is consistent with management approaches in other fields. In the private sector, for example, most managers insist on having profit-loss, cost-benefit, and other data for decision-making, and information systems are established to provide data for these purposes.

While A.I.D. has always required project monitoring and evaluation plans, these guidelines represent a new emphasis. They stress the importance of collecting empirical data as part of monitoring and evaluation efforts to form an information system. The purpose of such a system is to inform management decision-making and to document project effects.

Improving data availability, timeliness, and usefulness for managers is especially important at this time for several reasons. First, A.I.D. is seeking management improvements by delegating greater decision-making authority to field Missions. With increased responsibility and accountability, many managers in the field will want to know how to obtain timely, relevant, and useful data to inform the decision-making process.

Second, A.I.D. is also seeking to improve the project monitoring and implementation process. The availability of timely, relevant, and useful data helps identify project strengths and shortcomings and in this way assists managers in quickly fine-tuning the project if needed.

Third, as part of the management improvement process, A.I.D. seeks to improve evaluation quality and to strengthen evaluation capabilities. The quality of evaluation reports will be greatly enhanced if empirical data are available on which to base findings and recommendations.

Contents

The specific purposes of these guidelines are as follows:

- To identify "lessons learned" based on past experience with data collection for international development projects and to discuss ways these lessons can be applied during project design and implementation
- To provide ideas for data collection during implementation (with an emphasis on rapid, low-cost studies) when information systems have not been included in the design of the project

- To explain the steps involved in setting up an information system during project design and to set forth a suggested framework for data collection plans for A.I.D. Project Papers
- To provide sample, preliminary data collection plans for projects in agricultural research, health, population, irrigation, social forestry, and the private sector

Audience

This report is written for A.I.D. project and senior managers concerned with effective project monitoring and implementation. It is not written for those having expertise in data collection methodologies, but for generalists who may have to supervise data collection activities.

Several Asia/Near East Missions have recognized the need for improved data for project decision-making and have developed information systems for their projects. Given the movement toward the development of such systems, the Bureau for Asia and the Near East recognized the need for guidelines and resource materials to assist Missions in this effort.{1}

Findings and Recommendations

This paper reviews the most recent literature on data collection for international development projects. Major findings include the following:

1. Data Availability. Most A.I.D. projects are not data.

Recommendation: All A.I.D. Development Assistance and Economic Support Fund projects should be designed to include an information system for generating useful, relevant, and timely data. All Project Papers for such projects should contain a data collection, monitoring, and evaluation plan.{2}

2. Information Needs. Complex surveys and quasi-experimental designs may not provide useful data for management decision-making.

Recommendation: The data collection system should be designed to address the specific information needs of project managers and should include a combination of methodologies for gathering quantitative and qualitative information.

3. Administrative Records. Appropriately selected and designed administrative records are an effective source of regular data for observing project

performance.

Recommendation: To the extent possible, project information systems should be based on the routine collection and analysis of existing administrative data.

4. Rapid, Low-Cost Studies. Recent experience with rapid, low-cost studies has shown that this approach can provide useful, timely, and relevant data for decision-making.

Recommendation: The data collection system should include procedures for rapid data gathering and analysis to facilitate timely feedback and informed management decision-making.

{1} This paper was substantially underway prior to the merger of the former Asia and Near East Bureaus. Hence, the examples and case studies focus primarily on Asia project experience. Future papers of this type will also include examples from A.I.D. development experience in the Near East and other regions.

{2} The terms "data collection, monitoring, and evaluation" and "monitoring and evaluation" are used interchangeably in this paper.

AD - Agriculture Department

AE - Asset Effectiveness Analysis interview form

AMW - auxilliary midwife

ARI - Agriculture Research Institute

BI - Beneficiary Income Improvement Analysis interview form

CHW - community health worker

CYP - couple years of protection

FFW - Food for Work program (under PL 480)

H&SFD - Horticulture and Social Forestry Department

ID - Irrigation Department

IT - Information and Technology unit

LPPM - Institute for Management Education and Development

MIS - management information system

NIA - National Irrigation Administration

NITR - National Institute of Technical Research

PDC - Population Development Center

PM&E - Planning, Monitoring and Evaluation unit

PWD - Population Welfare Division

PWP - Population Welfare Program

SASC - Special Appraisal and Supervisory Cell

TBA - traditional birth assistant

VHW - village health worker

1. RECENT EXPERIENCE WITH DATA COLLECTION FOR DEVELOPMENT PROJECTS: LESSONS LEARNED

The theme of this section is the need for timely, relevant, and useful project performance data to improve project decision-making, implementation, and evaluation -- in short, to improve project effectiveness.

Over the years, A.I.D. has tried several approaches to make project data gathering and analysis more useful to managers. In the early 1970s, A.I.D. emphasized using the logical framework -- or logframe -- for analyzing project performance, and many evaluators then used the logframe to assess progress. However these analyses frequently ended with an examination of inputs and outputs, with little or no mention of purpose and goal achievement. Many of these evaluations concluded that if inputs and outputs were achieved, the project could probably be called a success. This clearly was insufficient information for informed project decision-making. An indicator of evaluation inadequacy in the 1970s was that use of evaluations by A.I.D. managers for decision-making was extremely rare.

Based on this experience, the Agency began to seek ways to provide analyses of purpose/goal achievements to managers and at the same time find out what really happened to project beneficiaries. A wide-ranging series of "impact evaluations" was initiated in 1979 in a variety of sectors.

These studies were designed to examine, in a short period of time, the question, "What difference has the project made to the beneficiaries?" The studies showed that valuable lessons could be learned fairly quickly about a project's effects on people. In some cases, impact evaluations were instrumental in providing useful data to project managers that resulted in important

modifications that enhanced project effectiveness.{1}

In other cases, however, some of these evaluations lacked empirical data, as well as more rigorous analysis, and for this reason were less useful for management decision-making.

While the impact evaluations were underway, some Agency staff advocated using more traditional methodologies for assessing performance and impact. They criticized the impact evaluations for being "quick and dirty" and argued for more rigorous methods to gather empirical data on project effectiveness and impact. In contrast to "quick and dirty," such approaches were at least "clean," they insisted, albeit "slow." Later, as discussed below, it became apparent that traditional methods were sometimes both "slow and dirty."

This brings us to where we are today. The impact evaluations sensitized Agency managers to the value of timely information. The impact evaluation critics called attention to the value of empirical data for decision-making. Clearly we need to draw on both approaches -- the efficiency of the impact evaluations and the empirical basis of more rigorous studies -- to provide the information that managers need. Can this be done? Can we develop practical, timely, relevant, and low-cost methods for gathering project performance data for management decision making?

{1} The impact evaluation of the Senegal Sine Saloum Rural Development project (A.I.D. 1980), for example, resulted in several important corrective actions taken by the Government of Senegal and USAID. These included appointment of new personnel, review of the project by the National Assembly, and subsequent project redesign. The data presented by the evaluation team for the Colombia Rural Roads impact evaluation (A.I.D. December 1979) were so convincing that the Colombian counterpart agency was able to convince the International Development Bank to fund a follow-on project.

1.2 Lessons Learned

The lessons presented below, based on recent A.I.D. experience with data collection, suggest some answers to these questions.

1.2.1 A.I.D. Projects Not Designed To Generate Data

Most A.I.D. projects are not designed to generate useful, relevant, and timely performance data for project decision-making.

In recent years, the single most common refrain of returning A.I.D. evaluation teams has been, "There were no data." This has been an important finding of project evaluations in almost every major sector in which A.I.D. works (see Box 1). This means that many project managers do not have the kind of information they need for effective monitoring and management. Nor are there

adequate data for documenting project effects and impact.

Why are there no data? A casual examination of A.I.D. Project Papers suggests one major reason: the absence of specific data collection plans. The Project Papers indicate that projects are simply not designed to generate data for decision making. This lesson suggests that project designs should include a simple, preliminary plan for generating useful, timely, and relevant data for managing, monitoring, and evaluating the project.

Box 1. Conclusions of A.I.D. Evaluations on Data Availability for Managers

Agriculture Research

"No institution has been collecting and analyzing data to indicate the impact of new technology as specified in the project paper. Even where accomplishments to date have been the greatest, as with tobacco, data were not available."

Philippines: Impact Evaluation, Philippines Agricultural Research Loan II, p.2 (1984).

Agriculture Extension

"Recommendation: Projects with an educational thrust should collect benchmark data on the pre-project behavior of the participants. Without this, it is not possible to make accurate assessments . . . about project achievements."

Thailand: "Agricultural Extension Outreach Project," Asia Bureau Executive Summaries FY 83, p. 31 (1983).

Social Forestry

"The almost complete lack of solid evaluation data, due to the slow implementation of monitoring and evaluation systems, makes a direct assessment of likely socioeconomic effects . . . extremely difficult."

India: Social Issues in the India National Social Forestry Project, p. 3 (1985).

Health

"The evaluation team was not able to determine program impact. Data were not available . . . which lend themselves to the analysis of change in health status contributed by the project."

Burma: Primary Health Care I, Evaluation Mid-Term Report, p.

2 (1982).

Watershed Management

"There is also a need for more conservation-oriented research, including basic research to compile and analyze data on rainfall, run-off and soil loss, and applied and on-farm research on alternative conservation measures and their effects"

Indonesia: Composite Report of the Watershed Assessment Team, Vol. I, Ch. 1, p.5, (May 14, 1983).

Irrigation

"Baseline data collection and subsequent monitoring efforts were inadequate for project needs . . . the documentation of benefits has been hampered considerably by insufficient attention to the assessment of project impact and quantification of project results. Because of the lack of baseline data, a re-evaluation of the predicted cost-benefits and internal rate of return calculations could not be done with any confidence."

Pakistan: The On-Farm Water Management Project in Pakistan, A.I.D. Project Impact Evaluation Report No. 35, p. 26 (June 1982).

Private Voluntary Organizations

"Appropriate statistics and analysis which make the connection between project goals, methods and project outcomes are rare. Baseline information is rarely available; consequently, it is difficult to interpret statements about impact or effectiveness with [little] sense of the situation prior to the project."

Thailand: An Evaluation of the Co-Financing Project of USAID/Thailand with the Private Voluntary Organizations, p. 44 (1983).

Nutrition

"A common shared information [monitoring and evaluation] system should be established based on the routine collection and use of a minimum quantity of relevant data at the point of service."

Sri Lanka: Nutrition Programs in Sri Lanka Using U.S. Food Aid, p. 137 (1982).

(A suggested outline for such a plan is presented in Section 3.)

Ideally, a specialist should be included on the project design

team, or brought in shortly after the project is designed, to develop the plan. The specialist should work closely with host country counterparts because many aspects of the data collection activities will have to be negotiated with counterpart implementing agencies, and their involvement and support will be critical to the success of the system.

1.2.2 Problems With Complex Surveys

Complex surveys and experimental designs^{2} may not be useful for A.I.D. project decision-making. Although complex studies and experimental designs may be useful in some instances, experience demonstrates that they are quite costly and often are not used for immediate project decision-making, not even for future project design. These methods often take too long to obtain results (sometimes over 5 years), collect too much data, and gather data that are irrelevant to specific decision-making needs of managers.^{3}

For example, a review of the usefulness of 10 complex surveys in Asia, Africa, Latin America, and the Near East revealed that five were expensive (generally between US\$300,000 and US\$1.5 million) and were not used in project decision-making. Three were considered "low-cost" (under US\$100,000) and were quite useful for decision-making. The usefulness of the remaining two studies was unclear (Cooley and Mazzie 1983, 14; see also, World Bank 1983, 14). Similarly, a review of nine costly, long-term (5 to 7 years) impact studies funded by the former Asia Bureau from 1975 to 1984 revealed that seven studies either were not used or were cancelled before completion. Major reasons for cancellation included changing A.I.D. evaluation requirements and information needs, subsequent diminished commitment by A.I.D. staff to the study, and unavailability of funds to support the evaluation (Hartz 1983).

Beyond the issues of data costs, relevancy, and timeliness, there are other problems associated with complex surveys and experimental designs: they are not necessarily more definitive than other approaches, and they cannot answer many of the questions A.I.D. managers have. Nevertheless, managers frequently consider only this method when they want information. However, experimental designs do not necessarily provide more clear-cut, unequivocal answers than do other methods due, in part, to the following.

Experimental designs are intended to prove causality. A major problem in using such designs to assess development projects is that extraneous factors constantly impinge on the study setting, making it virtually impossible to hold the research design constant over a long period. As a result, the ability to attribute change to the project and make definitive statements about impact diminishes.

This observation has been made by several individuals who have conducted such studies for A.I.D. One observer comments that there will always be a tradeoff between accuracy and timeliness. He opts for timeliness and recognizes that "there will always be some level of indeterminacy of analysis results. . . . While this indeterminacy is somewhat disturbing, our experience shows that

comprehensive, full-blown studies which devote far greater resources for data-gathering and analysis also yield indeterminate results. An unambiguous result cannot be obtained through application of the rigorous experimental model"^{4} (Drake and Nystuen 1984, 49; International Statistical Programs Center 1984).

Finally, experimental designs often overemphasize the usefulness of quantitative findings, to the exclusion of what has happened (e.g., production has increased, nutrition status has improved) but not why and how. Quantitative analysis cannot answer many of the questions A.I.D. managers have -- questions concerning institutional performance, the implementation process, participants' behavioral change, participants' quality of life, and unanticipated as well as anticipated project impacts. Exploratory and inductive methods are also needed to provide qualitative information and to examine these kinds of questions.

This lesson suggests that a data collection system must be designed to provide timely data to satisfy specific decision making needs of project managers rather than the long-term research interests of academics or consultants. Accordingly, A.I.D. and counterpart managers should work with an information specialist during the design stage to identify the minimum data they need for effective project decision-making. (Ways to design information systems to answer managers' questions are examined in greater detail in Section 3.)

The lesson also suggests that an effective data collection, monitoring, and evaluation system should include a combination of methods for gathering both quantitative and qualitative data. The questions managers have about their projects should largely determine the method that is used to obtain answers. If managers want to know "what has happened," quantitative analysis may be appropriate. If they want to know "how and why," case study methods and qualitative analysis may be more appropriate. (Information on designing systems that combine methods for data gathering is included in Section 3.)

^{2} An experimental research design uses the logic of the science experiment in investigating social phenomena. The essential feature of true experiments is the random assignment of treatment to targets (experimental group) and the random withholding of treatment from targets (control group). The "treatment" -- a development project -- is added for the experimental group only. After time, the researcher investigates whether the predicted changes occurred in the experimental group. If the predicted changes occurred in the experimental group only, the researcher's confidence that the development project caused or is linked to the changes is increased. The most elaborate true experiments are longitudinal studies consisting of a series of periodic observations over several years of the experimental and control groups. For further discussion see Manager's Guide to Data Collection (A.I.D. 1979, 26-33) and Evaluation: A Systematic

Approach (Rossi and Freeman 1985, 210-211).

{3} This is an extremely common problem. Field experience shows that far more data are collected than are analyzed. (See a review of 20 development projects in World Bank 1980, 25-28; see also, World Bank 1983, 10.)

{4} An evaluation of the Philippines Provincial Water project suggested three reasons why the quality of the original research design deteriorates over time: (1) it is extremely difficult, if not impossible, to "match" experimental and control groups in nonlaboratory settings; (2) development project administration changes during the period of project implementation as, for example, new knowledge is gained or budgetary constraints arise, thus compromising the original design; and (3) experimental and control groups are exposed to different exogenous factors during implementation, thus violating a principal assumption of such studies (i.e., that groups are the "same" except for the "treatment" -- the development intervention -- received by one group) (International Statistical Programs Center 1984).

1.2.3 Usefulness of Administrative Data

Appropriately selected and designed administrative records are an effective source of regular data for observing project performance. A 1982 study of six highly successful nationwide development programs found that four{5} used simple yet carefully designed administrative records to regularly assess program progress (Paul 1982, 208-211). Simple, one-page reports submitted monthly by local officials were quickly tabulated, and the results were shown to management. For example, for a family-planning program in Indonesia, the report provided information on new acceptors, by methods and types of services provided, and on stock of supplies.

For each of the four programs, managers relied heavily on the data to track overall achievement and to flag situations in which achievements were below expectations. Field visits and cross-checks were used to minimize exaggerated claims; field visits also were used to gather additional information informally. The simplicity of the reporting programs was appropriate to the simplicity of the design of the programs: the programs all involved the mass delivery of a single service.

The author of the study commented that "the development of a small set of key indicators which reflected the progress of the program was [critical] Although the information system appeared to be simple and limited in the types of data sought, its design called for considerable sophistication. The identification and selection of the most relevant indicators inevitably called for a great deal of skill and understanding." He summarized his findings as follows: "Successful development programs utilize monitoring processes which are simple, yet speedy in terms of feedback. Their information systems make use of both formal and informal sources."

The focused use of administrative data in the four programs differs fundamentally from the indiscriminate use of routinely collected administrative data. The key to the focused approach is the active involvement of top management in designing the data information needs. In contrast, in the indiscriminate approach, management typically is not involved in designing the data system.

As a result, managers are frequently flooded with masses of data that are routinely churned out by tradition-bound bureaucracies. Inasmuch as the significance of the data for project or program performance is often unclear, management tends to ignore the data in decision-making.

Positive features of the focused use of administrative data include the following:

- It is useful. It provides information on selected key aspects of project performance over time and thus allows managers to observe trends in project performance.
- It is practical. It builds on existing host government structures, procedures, and data.
- It is responsive. Formats for some administrative records can be adapted during project implementation to reflect more accurately the information needs of top management.
- It is simple and inexpensive. No elaborate or expensive surveys are involved. Simplicity permits quick analysis of performance trends and rapid feedback.
- It encourages institution building. By using the data planning, collection, and analysis skills of the host country, it supports institutionalizing the host country's capability to perform these functions.

This lesson suggests that the information management specialist should work with counterparts during design: (1) to identify existing data collection procedures which provide information on key performance indicators and (2) to fine-tune these procedures as appropriate so that the data accurately reflect key aspects of project performance.

{5} The four programs were the National Dairy Development Program of India, the Philippine Rice Development Program, Kenya's Small-holder Tea Development Program, and the Indonesia Population Program.

For the other two programs -- China's Barefoot Doctor Program and Mexico's Rural Education Program -- the author was unable to

obtain thorough information on the monitoring systems. He also discusses informal methods of monitoring. The author uses the term "program" to refer to development efforts that aim at the nationwide distribution of a service, in contrast to "projects," which typically aim at smaller regions.

1.2.4 Usefulness of Rapid, Low-Cost Studies

Rapid, low-cost studies can provide useful and timely data for project decision-making. Rapid, low-cost studies are a relatively new approach in evaluation. These studies emphasize gathering empirical data in informal ways that are low-cost, practical, and timely for project decision-making. (Rapid, low-cost studies are discussed in greater detail in Section 2 and Appendix B. The Bibliography lists some rapid, low-cost studies.)

Rapid, low-cost studies are particularly suitable for providing managers with data in a variety of situations that require quick feedback. Quick feedback is typically required when managers suddenly become aware of a problem, lack regular sources of information on the problem, and need information quickly to solve implementation problems and enhance project effectiveness. In fact, the previously cited study of six highly successful development projects found that one critical ingredient of success was "the use of simple information systems with fast feedback" (Paul 1982, 229).

Four documented examples in Asia of the use of rapid low-cost studies for project monitoring or evaluation purposes also provide evidence that this approach can quickly generate the qualitative and quantitative information that is needed for decision-making (Drake 1983 and personal communication; Van der Veld 1981; de los Reyes 1983; Honadle 1982). The four projects are Catholic Relief Services-Food for Work in India, On-Farm Water Management (Gal Oya) in Sri Lanka, National Irrigation Association irrigation projects in the Philippines, and an irrigation project in an unspecified Asian country.^{6}

Using information from an irrigation project, Honadle cites an example of the usefulness of a rapid, low-cost study for project decision-making. To assist in determining whether it would be desirable to change the structure of an irrigation association from a single-purpose cooperative to a multipurpose organization, a rapid, low-cost study was undertaken. Qualitative data were gathered using a variety of approaches: record examination, group interviews, and confidential interviews. Honadle concludes, "After an investment of less than one person-week of effort, it was possible to make a convincing case that this association was not yet an effective single-purpose organization and a transition to a multi-purpose role might cause its collapse Thus, with all its weaknesses, a rapid reconnaissance identified the context of decision-making in the associations, produced stronger behavioral data than had previously been available, introduced villager perspectives into a bureaucratic calculus and avoided an externally imposed and possibly destructive decision" (Honadle 1982, 643).

The value of rapid, low-cost studies was also demonstrated by a 1979 review of the usefulness of a variety of data collection approaches in the design of 14 projects in Africa, Latin America, and the Middle East. Of five rapid, low-cost studies conducted during the design of these projects, four were judged to be "critical"; that is, the project could not have been designed in their absence. The other rapid, low-cost study was found to have been "important"; that is, the method provided significant insights for design. Of the remaining seven more traditional approaches, two were "critical," four were "important," two were "of minimal use," and one (a statistical baseline survey) was "of no use" (A.I.D. 1979, Vol. II, 174).

This lesson suggests that managers should consider using rapid, low-cost approaches as a way to provide (1) regular information over time (e.g., by conducting a rapid, low-cost study annually on a preselected topic) and (2) ad hoc information on unanticipated implementation problems.

{6} Honadle discusses rapid low-cost studies used in the irrigation project but does not name the specific country. The irrigation projects in Sri Lanka and the Philippines used both rapid low-cost studies and other more traditional methods to produce management information.

1.2.5 No Blueprints for Data Collection, Monitoring and Evaluation Systems

There is no perfect information system, and there are no methodological "blueprints" for developing project information systems. There are no ready-made solutions for data gathering that can easily be adapted from one project and applied to another. Each system has to be developed specifically to fit the project environment -- cultural, sectoral, financial, and institutional -- and to provide the specific information needed in that context. This was an important conclusion of two major reviews. A review of 20 development projects in Eastern Africa stated that "the major conclusion . . . was that there are no ready-made recipes for the establishment of 'simple' [data collection, monitoring and evaluation] systems requiring 'minimum' information for 'quick' feedback to project management and/or other agencies responsible for planning future projects" (World Bank 1980, 28; see also A.I.D. 1979, Vol. I, 55).

This lesson reminds us that even within a given project, the information needs are bound to change as implementation proceeds; thus, information systems should be designed so that they can be easily adapted to changes in the project environment, capabilities to project success, and beneficiary needs (see, for example, Drake 1983, 19; Miller and Sahn 1981, 23; the majority of documents cited in this section make this point). New information needs arise which may have to be addressed through ad hoc rapid, low-cost studies. An effective information system must change and adapt to

provide genuinely needed information. Box 2 provides an example of how information systems can be designed to respond to changing information requirements.

All information systems have flaws and deficiencies. No one system will provide all the data that managers think they need for informed decision-making. Yet, too much time spent conceptualizing and planning a "perfect" system may result in an overly-ambitious and totally unmanageable effort that is of no use to anyone. Simplicity, feasibility, timeliness, and relevance must be the guiding principles. We have always lived with imperfect information and must continue to do so. Nevertheless, efforts to improve the information available to us must continue as well. Stated more eloquently, "Life cannot wait until the sciences have explained the universe scientifically; we cannot put off living until we are ready" (quoted in Honadle 1982, 633).

Box 2. Example of the Adaptation of an Information System to the Needs of a Project

The Community-Based Family Planning Service in Thailand began work in 1974 with conventional baseline and impact surveys. However, a 1977 appraisal expressed "major reservations . . . regarding the feasibility of obtaining required data based on the designed questionnaires" and indicated that delays in processing the survey findings made them almost useless to management for policy and strategy development. Findings of many of the surveys had not been analyzed, and those that had been did not relate to the problems faced in the local areas.

Realizing this, the project shifted to "mini-survey" techniques in 1978. Monitoring was carried out monthly by a supervisor who made house-to-house visits in a number of villages. The supervisor focused on three questions: Who was practicing birth control? What methods were being used? And who was using supplies obtained from what sources? Those identified as not using any family planning were urged on the spot to see their village supply source. This method not only provided the project with an up-to-date overview, but also with results that could be acted on immediately. (Burintratikal and Somianiego 1980, 195-288)

2. GUIDELINES FOR IMPROVED PROJECT MONITORING AND IMPACT ASSESSMENT: DATA COLLECTION DURING IMPLEMENTATION

Although most A.I.D. project designs have not included monitoring and evaluation systems as an integral project component, managers of such projects need data on progress and performance. What should they do? This section outlines steps that managers can take during implementation, in the absence of a monitoring and evaluation system, to obtain useful, timely, and relevant data.

There are two approaches managers can take. If the project is relatively young, and A.I.D. anticipates extended support in that sector, the manager may wish to call in specialists to assist in developing an appropriate data collection, monitoring, and evaluation system, to the extent that is feasible after implementation is underway.^{7} A major obstacle, however, is that counterpart agencies may not see the need for such systems or may lack appropriate data collection and analysis skills. Managers may then have to weigh the advantages of having a more comprehensive system against the staff time that will be "lost" negotiating it and implementing it with untrained field personnel.

In many cases, it will not be feasible to develop a comprehensive data collection, monitoring, and evaluation system after implementation begins. Yet it is still possible to obtain progress and performance data on key management and impact questions by turning to specialists in rapid, low-cost methods. These methods are probably the most useful data gathering approach for projects lacking a data collection, monitoring, and evaluation system.

^{7} In Nepal, for example, A.I.D. managers prepared data collection plans for two projects after implementation was underway. Two refining these plans (see Kornis and Smith 1985).

2.2 Rapid, Low-Cost Studies

Rapid, low-cost studies use an approach to data gathering that emphasizes low-cost and quick analysis of quantitative and/or qualitative data. This approach is guided by two principles: (1) "optimal ignorance," or the art of knowing what is not worth knowing, and (2) "proportionate accuracy," or the avoidance of unnecessary precision (Chambers 1981, 99). A consensus seems to be emerging that a high degree of data accuracy is unnecessary for project decision-making.

For example, project managers at a workshop on East Asian projects' monitoring and evaluation systems concluded that "data on the progress and achievements of rural development projects did not have to be highly accurate. Some felt that an 80 percent and higher accuracy level was acceptable and useful for decision-making" (World Bank 1980, 27). Another feature of rapid, low-cost studies is the use of proxy indicators; for example, village prosperity might be measured by observing the quality of roof and floor material or the availability of bicycles and motorbikes, electricity, and potable water in the village rather than by attempting to measure household income, a more costly and time-consuming approach.

The following are some of the positive features of rapid, low-cost studies:

- Rapid feedback/low costs. Such studies are completed in

a week to a few months, which permits quick feedback to the manager and lower costs.

- Information on project trends. Due to their low costs, these studies can be undertaken at regular intervals throughout the project life to provide managers with information on performance trends on a regular basis. These types of studies are especially useful for shedding light on a project's effect on beneficiaries during implementation.
- Information for management problem solving. Because rapid, low-cost studies can be mobilized and completed quickly, they can provide managers with information on an ad hoc basis as unforeseen problems and uncertainties arise during implementation. (Box 10 [p. 43] shows how rapid, low-cost methods can be used when unforeseen questions arise during implementation.)
- Replicability. Because sophisticated techniques are not required, local social scientists can be trained relatively quickly. Thus, rapid, low-cost studies contribute to local capacity building because they can be replicated by local individuals and institutions.

Rapid, low-cost studies can be completed more quickly than studies using more traditional methods because the scope of the study is more limited. The number of sites visited, the sample size,^{8} the variables examined, and the questions asked are minimized to facilitate quick analysis. Although rapid, low-cost studies are completed quickly, a degree of rigor can be obtained through the following approaches:

- Purposive sampling -- Interviewing individuals who meet certain criteria -- (e.g., farmers who own less than 2 hectares, women who are active in agriculture) rather than using more time-consuming, random sampling techniques
- Gathering of empirical data -- using techniques identified below and elaborated in Appendix B
- Use of comparison groups -- for example, interviewing participant and nonparticipant farmers in a project
- Tabulation of data -- quantitative analysis or aggregation of the data into analytic categories (qualitative analysis)

^{8} A 1986 study points out that "Despite stubbornly-held myths, sampling does not have to be complicated, time-consuming or expensive. The facts are that samples: (a) do not have to be large to meet the inferential requirements; (b) do not depend on the size of the population and do not, therefore, require coverage of a certain percentage of the population; and (c) can be drawn from as narrowly defined a group as desired by project

managers and do not have to be drawn from an area's entire population." (For further discussion, see Casley and Kumar 1986.)

2.3 Data Gathering Techniques

The most common data gathering techniques used in conducting rapid, low-cost studies are discussions with key informants, group interviews, guided interviews, observation, informal surveys, and rapid, non-random sample surveys. These techniques are described in greater detail in Appendix B.

2.4 Use of Rapid, Low-Cost Studies To Answer Managers' Questions

Rapid, low-cost studies can be conducted (1) on a planned, regular basis (e.g., quarterly, biannually, annually) to provide managers with information on project trends and thus to generate the data necessary for subsequent impact evaluations or (2) on an ad hoc basis, when managers need additional information to deal with uncertainties and unexpected problems in implementation.

In this section, we will discuss some common information needs of managers and the kinds of rapid, low-cost studies that may be useful for answering their questions. Examples given will be taken from actual studies prepared and planned for development projects in Asia (see Box 3). Common questions managers have include the following:

- Questions triggered by analysis of administrative data (Section 2.4.1)
- Questions concerning behavioral changes in and/or benefits for project participants (Section 2.4.2)
- Questions concerning subproject effectiveness (Section 2.4.3)
- Questions concerning the project implementation process (Section 2.4.4)

Box 3. Rapid, Low-Cost Studies Conducted
for A.I.D., 1980-1985

Rapid, Low-Cost Data		
Managers' Questions	Collection Approach	Example
Questions Triggered by Analysis of Administrative Data	Quantitative Data, Structured Interviews	The Socio-Economic Impact of Roads In Nepal (Thapa 1983)
Quantitative and Qualitative Data,		The Potable Water Project in Rural

Structured Interviews Thailand (Dworkin and Pillsbury 1980)

Questions Concerning Qualitative Data, Madhya Pradesh Social Behavioral Changes Group Interviews Forestry Project Mid in or Benefits for Term Evaluation Project Participants (Arndt and Pharr 1983)
 Qualitative Data, Social Forestry in Structured, Madhya Unstructured Pradesh: Case and Key Studies of Lohgarh Informant Gram Panchayat and Interviews Salva Gram Panchayat (USAID/India 1983)

Questions Concerning Quantitative and The Implementation of Subproject Qualitative Data, a Planning, Monitoring and Effectiveness Structured and Evaluation System Interviews for PL480 Title II Food for Work Programs in India (Drake and Nystuen 1984)

Questions Concerning Qualitative Data, Organizing Farmers the Project Participant for Irrigation Implementation Observation Management: The Process Buhi-Lalo Experience (Illo et al. 1982)

Questions Concerning Qualitative Data, The Accelerated Project Effects on Unstructured Mahaweli Programme Beneficiaries Over Interviews (AMP) and Dry Zone the Project Development (Scudder Implementation Period and Wimaladharma 1983)

-- Questions concerning project effects on beneficiaries during the project implementation period (Section 2.4.5)

The purpose is not to identify every possible information need of managers, but simply to give the reader a rough idea of the types of questions managers have and the ways in which a rapid, low-cost study may answer those questions.

2.4.1 Situation 1: Questions Triggered by Analysis of Administrative Data

Ideally, analysis of administrative data will regularly provide the manager with comprehensive information on actual inputs and outputs

versus those planned. This information in itself can "trigger" questions that a manager will want answered. The manager may wish to investigate these questions quickly in order to make appropriate implementation decisions for the remainder of the project. In this case, a rapid, low-cost study which collects quantitative data may be the most useful. Box 4 shows the kinds of questions managers (of hypothetical roads or water projects) may have as a result of analysis of administrative data.

Answering the Manager's Question: Rural Roads Project

The manager of the rural roads project needs to know if the completed roads are having a sufficient socioeconomic effect to justify further road construction according to the original schedule. To answer this question, he or she might contract for the kind of study undertaken in Nepal in 1983 (Thapa 1983). For this study, USAID/Nepal hired a Nepali economist to study the socioeconomic impact of the Western Hills Road.

Methodology. This was a rapid, low-cost study that gathered quantitative data. The study was conducted in four phases and was completed in approximately 1 month. Phase 1 consisted of a review of related documents and preparation of questionnaires to be used in interviews. Phase 2 (10 days) consisted of collecting the data in the project area. Thirty- six interviews in three districts in Far Western Nepal were conducted. The sample was stratified according to distance of residence from the Western Hills Road: 0-1 km (16 respondents), 2-5 km (15 respondents), and 6-18 km (5 respondents). In phase 3 (9 days), the data from the questionnaires were tabulated and analyzed in Kathmandu. In phase 4, the information was systematically arranged in a draft report.

Box 4. Examples of Questions Triggered by Analysis of Administrative Data

Administrative Planned Outputs	Manager's Data Reveals that:	Question
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Rural Roads Project

10 roads completed each year during a 5-year project	After 1 year, all 10 roads completed on schedule	Are the roads having a sufficient socio-economic effect to justify further road construction according to original schedule?
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Potable Water Project

100 potable water systems installed and functioning	All 100 systems installed; only 50 functioning	Why are only 50% of the systems functioning as planned?
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Major Findings. The majority of respondents replied that, after completion of the road, they had changed their farming practices (60-88 percent); had increased production because of the increased availability of improved varieties (86-100 percent); and had increased household income (about 80 percent). However, the road seems to have had an even greater impact on improving access to services:

- Approximately 40 percent of respondents closest to the road reported practicing family planning; 0 percent of those farthest from the road reported practicing family planning.
- From 70 to 80 percent of those living closest to the road reported sending girls to school; 25 percent of those farthest from the road reported sending girls to school.

Comment. While this kind of assessment cannot provide statistically accurate estimates of the group studied, it provides sufficient interim information on the socioeconomic impact of the road to answer the manager's question posed above.

Answering the Manager's Question: Potable Water Project

The manager of a hypothetical potable water project needs some answers fast. Analysis of administrative data has revealed that although all the planned water systems have been installed, only 50 percent are functioning. The manager needs to know why. A study similar to one undertaken in Thailand in 1979 (Dworkin and Pillsbury 1980) could help answer this question.

Methodology. This 5-week study was conducted by a geographer, a medical anthropologist from the United States, and a sanitation specialist from the Thai Ministry of Public Health. Of 212 completed potable water systems, a random sample of 52 systems was selected and stratified by province. Sample selection was modified to eliminate systems that did not cluster geographically in order to facilitate site visits. Fifty-two systems serving 133 communities with a total population of 170,000 persons were evaluated. A standardized questionnaire was administered at each site. Quantitative and qualitative data were gathered. Respondents usually included the system operator, the village chief, village leaders, and other villagers.

Major Findings. This study of the Potable Water project in rural Thailand gathered the kind of information that might help to answer the hypothetical manager's question posed above. Based on the interviews

conducted, the study found that the major reasons for system breakdown included the following:

- Community participation. "Underestimation by project planners of the importance of community participation and management"
- Equipment. "The A.I.D.-furnished Onan engines proved to be difficult to obtain"
- Maintenance. "Failure to include an adequate maintenance component in the project design resulted in . . . inferior performance"

The study also found, quite unexpectedly, that the major impact of the project appeared to be economic. Out of 56 responses, "more gardening and farming" was mentioned 21 times as the most important benefit of the water system.

Comment. With this information, gathered and analyzed quickly in 5 weeks, the manager could begin to take steps to increase project effectiveness: develop a maintenance component, purchase necessary commodities, and increase the emphasis on community planning and participation. The unexpected findings on economic impact might prompt the manager to investigate further how the project could include activities or link up with other projects to further assist villagers who are using the water for gardening and farming.

2.4.2 Situation 2: Questions Concerning Behavioral Changes in or Benefits for Project Participants

For many projects, success is contingent on behavioral changes on the part of participants. An effective manager will want to know whether

the anticipated behavioral changes are actually occurring and whether project benefits are being distributed equitably as anticipated. The manager of a social forestry project may have such questions. For example, analysis of administrative data may indicate that specific outputs are in place, but the manager may wonder whether the behavioral benefits associated with these outputs are occurring. Box 5 shows three specific outputs associated with a hypothetical social forestry project, the anticipated behavioral change associated with the output, and the manager's questions.

Answering the Manager's Questions: Social Forestry Project

To answer the questions posed in Box 5, a rapid, low-cost study could be undertaken to collect qualitative data soon after some of the outputs (say 10 percent) are in place. Two such studies have been completed for the Madhya Pradesh Social Forestry project in India. (USAID/India 1983; Arndt and Pharr 1983, Section IV.A).

Methodology and Findings: Social Forestry in Madhya Pradesh; Case Studies of Lohgarh Gram Panchayat and Salvai Gram Panchayat (USAID/India

1983). To answer these questions, an informal survey/case study method was used. USAID/New Delhi contracted with a local research organization to examine issues of community management and benefit distribution. A team of seven Indian researchers spent approximately 6 weeks in five villages. They interviewed key informants, Panchayat officials, villagers involved in the social forestry project, and forestry department officials. A staff person in the Mission noted that the research method used was best described as "investigative reporting." The entire case study was completed in 8 weeks for a cost of US\$5,000.00. The report included numerous quotations

Box 5. Example of Questions Concerning Behavioral Changes in Project Participants

Outputs	Assumed Behavioral Change	Manager's Questions
forestry programs established; trees planted on woodlots	stand program objectives and participate in selecting the kinds of species most suited to their needs.	stand the program objectives? Are they selecting the species they need?
Woodlot management plans agreed to by village councils	Village councils preparation of plans (plans are not produced solely by Forestry Department)	Have village council actually participated in preparation of the management plan or have they merely accepted a plan produced by the Forestry Department?
Plans for equitable distribution of fuelwood prepared by village councils	Village councils implement equitable distribution plans and is woodlot production equitably distributed?	Have the distribution plans been implemented by the village councils,

from those interviewed to provide a more comprehensive understanding of participants' perceptions. The study found the following:

- The primary initiative for the social forestry program

came from the Social Forestry Department (rather than from the villagers).

- No management plans were developed, and the rights and obligations of the village councils were not discussed.

technical considerations, with no consultations with villagers.

- The distribution of the fodder and fuelwood produced was not done in any organized or equitable way; many villagers remained unaware of its availability.

Methodology and Findings: "Community Management Issues: Popular Support and Participation" in Madhya Pradesh Social Forestry Project Mid-Term Evaluation (Arndt and Pharr 1983, Section IV.A). This study provides another example of a rapid, low-cost study which gathered qualitative data to answer the kinds of questions posed in Box 5. To assess issues of community management, popular support, and participation, the social scientist on the evaluation team conducted group interviews in two participant and two control villages over a 2-3 day period. The groups were composed of poorer villagers. Separate sessions (with 5 to 30 persons participating in each) were held in each village with landless villagers, marginal farmers (under 2 hectares), and women (from families with under 2 hectares). About 60 people took part in the meetings. After a few days, the group interviews revealed the following:

- In participant villages, the level of knowledge about the program and tree planting was quite high; in the comparison villages, comparable knowledge was lacking and tree planting was virtually an unknown idea.
- Skepticism about equitable distribution of fodder and firewood was quite high; the landless had not been informed of the potential benefits.
- There was uniform agreement that someone outside the village council would have to supervise distribution if the poor were to receive any benefits.
- Of four possible methods of distribution of fuelwood and fodder, the poor villagers overwhelmingly favored the plan that allowed them to manage, protect, and gather least involved in this potential distribution plan.

Comment. Studies like these, undertaken in a very short period of time at low-cost, could tell a manager that, in most respects, behavior is not changing as anticipated. Having this information early in the life of a project could help the manager make the decisions needed to refine the project and enhance effectiveness. For example, the manager could request that a training component for foresters be included in the project to educate Forestry Department staff about the community management aspects of the project. At the same time, he or she could also request ongoing studies of various "model" distribution plans

to determine which would be the most equitable.

2.4.3 Situation 3: Questions Concerning Subproject Effectiveness

Answering the Manager's Questions -- Rural Infrastructure Project

A manager may be responsible for implementing a complex rural infrastructure project involving road construction, small-scale irrigation systems, schools, and low-cost housing.

He or she may desire information on subproject benefits and costs, overall subproject effectiveness, and factors facilitating or hindering subproject implementation. This might tell the manager which types of subprojects are the most effective under what conditions. The manager and counterpart implementing agencies could then use this information to improve the annual planning, implementation, and evaluation processes.

Under these circumstances, the manager might want to initiate the kind of rapid, low-cost studies that have been undertaken by Catholic Relief Services, with the former Asia Bureau's support, for the India Food for Work (FFW) program (Drake and Nystuen 1984). This approach includes procedures for a specific number of annual studies to gather both quantitative and qualitative data.

Methodology. Managers of this program had several major employment opportunities, cost-beneficial, and improving the quality of life for the most disadvantaged? Food for Work program managers believed that regular access to appropriate data -- both quantitative and qualitative -- would assist them and their counterparts in managing the overall implementation process. With assistance from two consultants, the managers designed a system -- involving between 12 and 60 beneficiary interviews annually -- to provide rapid analysis of these issues and feedback to field staff annually.

The number of interviews conducted depends on information needs in each zone and available resources. Two different interview forms have been prepared: the Beneficiary Income Improvement Analysis form (BI), used when the primary subproject benefits can be measured in economic terms for land-leveling, irrigation, tank construction, or social forestry projects; and the Asset Effectiveness Analysis form (AE), for projects which yield benefits not readily amenable to quantification. Finally, case studies of specific projects will also be undertaken. These will be more in-depth investigations of certain aspects of more-or-less successful projects. The major purpose will be to examine (1) those factors which seem to enhance or impede implementation and (2) unanticipated or secondary effects of the project. One or two case studies will be undertaken in each zone initially.

Comment. The system designers are aware of the limitations

in the analysis of income or benefit-cost information. For example, climatic variation, changes in market price, or faulty farmer recall could strongly influence reported net gains. They believe, however, that a heavier investment of time or resources will not yield more definitive answers.

The cost of establishing and testing this system (three temporary duty assignments for two consultants over an 18-month period) was approximately US\$56,000. Between 1985 and 1990, the program level will be approximately US\$30 million, so the cost of setting up this system is approximately .002 percent of total program costs. The cost of undertaking each BI or AE analysis has been estimated at US\$46.00, and includes the following:

- Staff travel to the field
- The interview
- The analysis
- Entry of data into a lap computer at the zone
- Computer processing time
- Computer verification of the accuracy of results
- Analysis comparing the completed study to other studies in the zone
- Situation analysis -- going beyond benefit-cost and analyzing noneconomic indicators as well (Drake and Nystuen 1984, 49)

2.4.4 Situation 4: Questions Concerning the Project Implementation Process

Answering the Manager's Questions -- Irrigation Project

Many managers want regular information on project implementation effectiveness, especially if the process is new or innovative. In a case like this, managers may wish to conduct rapid, low-cost studies similar to those undertaken for the Rinconada/Buhi Lalo irrigation project. USAID/Philippines assisted in funding these studies from October 1981 through March 1982 (Illo et al. 1982).

Methodology. For many years, the Philippine National Irrigation Administration (NIA) tested various ways to increase farmer participation in irrigation, but these attempts did not produce the desired results. In December 1980, they decided to use the A.I.D.-funded Rinconada/Buhi-Lalo project as a site for testing a new participatory approach which involved hiring and training 15 community organizers. The community to help farmers develop irrigator organizations and to assist farmers in working with NIA's technical staff in planning and constructing the canals.

Recognizing the significance of this new participatory approach, if successful, and its potential for broader application in NIA, top NIA officials wanted to fully understand the process of field-level activities.

In December 1980, therefore, NIA commissioned the Research and Service Center of the Ateneo de Naga to document the participatory approach in the development of national irrigation systems. Using participant observation techniques, the research team prepared 15 monthly documentation reports on the Upper Lalo zones and another 15 on the Lower Lalo zones.

Participant observation techniques require that the researcher observe and record the tasks and responses of project participants during both formal and informal activities. The researchers, therefore, resided in the project areas. They were present during project activities like meetings, discussion sessions held by farmer leaders, and NIA-farmer negotiations. The researchers also conducted unstructured interviews with project participants on issues or problems which emerged during the documentation period. In Upper Lalo, for example, the research focused on the following project tasks: (1) securing farmers' participation in the review of designs of field facilities, (2) involving farmers in the construction survey and in right-of-way negotiations, (3) engaging farmers in construction, and (4) developing farmer organizations.

Each report attempted to (1) reveal the process by which irrigator organizations were developed in the area, (2) specify the farmers were involved in planning canals, and (3) derive lessons which could help NIA identify the operational requirements for implementing the participatory approach in national irrigation system development.

Major Findings. Among many other items, the research identified the positive benefits and some of the organizational and implementation requirements of the participatory approach. Among the positive benefits were the following:

- The number and total length of ditches were kept to a minimum, which reduced costs and minimized the loss of farm area to ditches.
- Farmers' intimate knowledge of the topography of their farms helped accommodate the ditch designs to the terrain; thus, when the system began operations, all ditches functioned as anticipated, which, the engineers noted, is rarely the case in nonparticipatory projects.
- Farmers erased only 1 of the 68 constructed channels, a marked improvement over nonparticipatory projects, where farmers erased the great majority of new channels built by NIA.
- There was only one construction delay due to a right-of-way

problem, again a marked improvement over the nonparticipatory approach.

The research also revealed the new costs and constraints of implementing the participatory approach compared with traditional approaches:

- Community organizers had to be hired and trained; organizing costs amounted to approximately 113 pesos per
- Time had to be allowed for farmers to propose revisions.
- Construction schedules had to be flexible enough to adapt to farmers' readiness to participate in construction.
- NIA had to train farmers.
- Farmers wanted project management and technical staff to come to meetings, posing an additional demand on their time.

Comment. These studies were extremely useful in identifying the benefits and constraints of the participatory approach for top NIA managers. NIA management subsequently used the information to develop and implement this approach in other irrigation systems; it is now used in 26 national irrigation systems covering about 23,000 hectares.

A.I.D. managers who want a more detailed understanding of the implementation process might consider using rapid, low-cost studies based on participant observation techniques. (This approach is considered "rapid" because, although the researchers were in the field for many months, reports were generated on a monthly basis.) This approach might also be helpful to managers of other types of projects in which beneficiary participation is particularly important for project success: agriculture research, especially for those projects having a farming systems focus; social forestry; appropriate technologies; or watershed management. This approach might also be useful for understanding the implementation process in projects with a women's component.

2.4.5 Situation 5: Questions Concerning Project Effects on Beneficiaries

Sometimes managers know they will have questions concerning a project's effects on beneficiaries over the entire implementation period. For example, they may be responsible for a project designed to provide infrastructure and social, economic, and educational services to new settlers. Although they may not want quantitative production or benefit-cost data, they may want regular, qualitative information on beneficiaries' quality of life. In a case like this, a manager may wish to initiate a series of studies similar to those undertaken for the A.I.D.-assisted Mahaweli Basin project in Sri Lanka (Scudder and Wimaladharma 1983).

Methodology. The Accelerated Mahaweli Program is one of the largest irrigation projects currently under construction. Its purpose is to increase production by providing irrigation infrastructure and social, economic, health, and educational services to new settlers in the project

area. The program managers wanted information on an annual basis on the effects of the project on beneficiaries' quality of life. Were the services being provided to the settlers as originally planned? Was the combination of irrigation infrastructure and services contributing to development in the region? To answer these questions, a rapid, low-cost study to gather qualitative data has been undertaken yearly between 1979 and 1985 (with the exception of 1982) by the same two-person team (an expatriate anthropologist and a Sri Lankan with expertise in settlement projects).

The studies used repeated interviews with a small number (31) of settler households over an extended period. Although the households were not randomly selected, they are representative of the major categories of settlers.

Comment. This approach provides qualitative information within a few weeks after completion of the fieldwork. "And unlike most conventional surveys," the authors note, "it is longitudinal, following the fortunes and misfortunes of the same households over an extended time period. As a result, we obtain quite accurate cumulative histories of a number of households, with the quality of our data improving with each successive interview. And since these histories are remarkably similar from one area to another, we believe that they are a valuable means for providing timely and updated information for policy-makers which would not otherwise be available. Where this information relates to potential problems, or newly emerged problems, our [approach] serves the function of an 'early warning system'."

The authors also believe that this approach provides data sufficiently accurate for planning purposes. One way they test the accuracy of their findings is by cross-checking their results with results of other recently completed, more traditional field surveys. They have cross-checked results with a World Bank-financed survey and with a survey completed under the A.I.D.-assisted Water Management Synthesis II project. Broad areas of agreement increase the authors' confidence in the accuracy of the findings.

The entire cost of these studies conducted over a 5-year period has been US\$100,000 to date. Life-of-project A.I.D. funding for the Mahaweli Basin I and II projects was US\$120 million, so the cost of the study represents less than 0.1 percent of A.I.D. funding for this program.

Answering the Managers' Questions -- Resettlement Project

Findings. These studies also provided considerable information on the resettlement aspects of the Mahaweli Program, which could answer a manager's questions concerning beneficiaries' quality of life. The studies found the following:

- Although the authors had reported in 1981 that dynamic growth had begun in System H, by 1983 this early promise seemed to be slipping away.
- There was an increasing trend toward subsistence rather than economic growth.
- There was increasing stratification, with the more successful farmers leasing additional land and less successful farmers leasing out part of their holdings because of insufficient capital.
- Settler organizations were increasingly dominated by authorities from the Mahaweli implementing agencies rather than by the settlers themselves.
- Between 1981 and 1983, a major shift in settler family attitudes had occurred, with settlers growing increasingly cynical because of the poor quality and inconsistent delivery of services.
- The rate of development appeared to have slowed down as measured by the inability of many settlers to improve their housing or purchase tractors.
- The reasons for the slowdown included inadequate water supplies in 1982 and 1983, credit problems, reduction in off-farm employment, and increased illness.

Comment. With this kind of information available regularly an effective manager could take steps to modify the downward comes to an end. Possibly a component for studying and mobilizing off-farm employment could be added; a special team of irrigation engineers could be set up to improve water availability; and health facilities could be established.

3. GUIDELINES FOR PREPARING DATA COLLECTION, MONITORING, AND EVALUATION PLANS DURING PROJECT DESIGN

3.1 Introduction

In view of the lessons of Section 1, what can A.I.D. do in a more systematic way to ensure that (1) A.I.D. projects generate performance data to inform decision-making and to document impact, and (2) when appropriate, A.I.D. projects assist in building counterpart capacity in data gathering and analysis to improve project planning and implementation?

This section discusses steps that should be taken during project design to ensure that A.I.D. projects generate the data that managers need. It sets forth a step-by-step approach, based in part on the lessons learned, for designing a project information system. (Appendix A provides an issues checklist to be used in preparing Project Paper

data collection plans based on the discussion in this section.)

There are several advantages to having a data collection, monitoring, and evaluation system as an integral element of project design. First, the feasibility of data collection, monitoring, and evaluation can be used as a key criterion of acceptable design. That is, if the resultant system is too complex, this may be an immediate indicator of problematic design: projects that cannot be efficiently monitored and evaluated probably cannot monitoring and evaluation at the outset permits these activities to be financed throughout the project (time is not wasted looking for funds and contractors for special studies), and in many cases, only one data collection, monitoring, and evaluation contract may have to be negotiated when implementation begins.

Third, an element of trust is built up over time between the monitoring and evaluation staff and the project staff; thus, findings are accorded greater acceptance, and negative findings are more likely to be addressed. As a result, there is a greater tendency to use and build on evaluative information.

Some may argue that host countries have little interest in data collection and will not want their already overworked staff to take on the additional burden of collecting data. However, in most instances,

host countries are already engaged in the burdensome task of collecting mounds of data that go unanalyzed and unused. Scarce human resources and expensive material (paper, pens, pencils, calculators) are wasted in this process. Transforming this effort into a useful process is an important element of capacity building.

Furthermore, experience shows that as host countries come to understand how critical information systems are for planning purposes, they begin to support these systems and take appropriate steps to improve them. Extremely useful information systems have been established

in the family planning programs in Indonesia and Thailand, for example, and the systems have been a critical element of program success. Although the information systems had been partially supported by A.I.D., the systems are now primarily host government-supported elements of successful national programs.

The Bureau for Asia and the Near East has some experience developing monitoring and evaluation systems during project design. For example, the World Bank/A.I.D. National Social Forestry project for India was designed to include a very comprehensive monitoring and evaluation system.

The following are some of the important aspects of the system that were established during the design:

- Numerous items were negotiated with the Government of India and agreed to, including the type of data to be collected, the frequency of data collection, the administrative focus and staffing of the monitoring and evaluation unit, and data collection formats and procedures for feedback.

- The Project Paper contains covenants on monitoring and evaluation concerning the frequency of data collection, transmission of the information to USAID, and training of the staff.
- The project will include long- and short-term technical assistance for monitoring and evaluation.
- A handbook describing the data collection, monitoring, and evaluation system was developed to guide data collection activities.
- Government of India Forestry Department staff will participate in special evaluation training and will then staff state-level monitoring and evaluation units.

Although this system may be modified as implementation proceeds, the design process is illustrative of the kinds of tasks that must be undertaken to build an integral monitoring and evaluation system for a project. The remainder of this section describes the steps that should be taken during project design to develop a data collection, monitoring, and evaluation system.

3.2 A Step-by-Step Approach for Designing a Project Information System

A first step that should be taken by Mission staff is to designate an individual to develop a data collection, monitoring and evaluation system as set forth in these guidelines. This person can be a member of the design team or a Mission staff member who works with the design team.

In some cases, it may be useful to employ special expertise. In most cases, this individual should have experience with alternative data collection methods: informal surveys, case studies, content analysis of administrative records, or related nontraditional methods.

The specialist's primary tasks are (1) to develop a system that is an integral component of the project -- a component fully negotiated with the host government and adequately funded -- and (2) to prepare the data collection, monitoring, and evaluation plan for the Project Paper.

What should the monitoring and evaluation system be designed to do? Ideally a monitoring and evaluation system should be created as part of the project's administrative structure. The major functions of the system should include the following:

- Regular analyses of administrative data on select indicators of project progress and performance (this is sometimes called "performance monitoring")
- Planned or ad hoc studies on key management or impact questions
- Procedures for timely feedback of both types of information to

managers

The specialist will work with A.I.D. and counterpart staff to design such a system. The steps the specialist will have to take are as follows:

1. Identify the users
2. Clarify project goals, purposes, inputs, and outputs
3. Identify the managers' questions
4. Identify key indicators and administrative data to answer managers' questions
5. Select other appropriate methods to answer managers' questions
6. Clarify counterpart support and involvement
7. Develop feedback procedures
8. Develop the budget
9. Perform other related tasks

These steps are discussed in greater detail below.

{9} In the remainder of this paper, the term "specialist" refers to the person assigned responsibility for developing the monitoring and evaluation system.

3.2.1 Identifying the Users

An effective information system cannot serve everyone connected with the project. Therefore, the specialist must identify the priority users and their information needs. The key information users for most A.I.D. assisted projects would probably be the following:

- Counterpart field staff who need to know regularly "how they are performing"
- Counterpart administrative and planning staff who need program data for planning purposes
- A.I.D. project and program officers and senior management in the Missions who need progress and performance data for implementation decisions

The involvement of these groups in defining information needs is critical from design through implementation. In the absence of users' involvement, the task of defining information needs is often left to the "experts." "This is frequently the beginning of the end; the

information specialist designs the system in a vacuum and it ends up being irrelevant from the standpoint. . . of the users" (A.I.D. 1979, Vol. I, 62). For example, for an information system established in a Southeast Asian country, managers asked the experts to tell them what information they needed. As a result, data on over 1,000 variables were collected, far more than could ever be analyzed or used.

3.2.2 Clarifying Project Goals, Purposes, Inputs, and Outputs

A main advantage of a monitoring and evaluation system is that it allows for a continual analysis over time of trends toward achievement of goals and purposes (as well as inputs and outputs). The point is not to see goal or purpose achievement at any one point in time but to observe trends to ensure that reasonable movement in the proper direction is taking place. To do this, it is important to know very specifically what should be changing. Observing movement, regardless of how it is measured, becomes an impossible task if goal and purpose statements are vague or confusing.

Thus, the specialist should confer with A.I.D. and counterpart staff to ensure that the goal(s) and purpose(s) are well-defined and to offer ideas for clarification if they are not. The following points should be kept in mind.

Goals and purposes should be stated as results, not as activities. For example, the prominent feature of many family planning projects is "dissemination of contraceptives." This, however, is the prime activity which should contribute to the result of "births averted" or "reduced fertility rates." For agricultural projects, "training agricultural extension agents" is the activity leading to the result of "increased agriculture production" or "increased farmer income."

A helpful procedure for stating goals and purposes as results is to write a statement describing the problem that the project will address. Then, invert the problem statement into a new statement that presents a solution. For example:

- Problem statement: Population growth will outrun domestically produced cereal grain supply in a few years.
- Inversion: Increase domestic production of cereal grains to meet the needs of growing local population.

Goals and purposes should be stated as explicitly as possible. Goal and purpose statements should be explicit with respect to what is to change, magnitude of change, benchmarks or target dates for change, and target area or audience that will experience change. For example, a vaguely written goal/purpose statement such as the following:

Increase agriculture productivity can be transformed into the following more explicit statement:

Increase domestic production of rice from _____ metric tons in 1982 to _____ metric tons in 1986 in the

northwestern province.

Although such specificity is an ideal and will not be possible for every project, the specialist should attempt to be as specific as possible concerning the four areas identified above.

3.2.3 Identifying Managers' Questions

To help managers identify their questions, the evaluation specialist should meet with as many of them as possible to discuss their information needs. This is perhaps one of the most difficult tasks of all. First, it is usually impossible to meet with all the intended "users." Second, helping to identify the information managers' needs is often a very trying experience. Although most people have some model of assessment that they use to make decisions, it is often implicit and based on intuitive processes that are difficult to articulate.

There are some things, however, that the specialist can do to help managers articulate their information needs. The first is simply to talk

with them about their role in the project. What specifically do they do daily or weekly that relates to the project? What are they responsible for? How do their decisions affect the project? What do they hope to see achieved by the project? What are their concerns? What do they find most interesting in the project? What are the areas of the project about which they have uncertainties?

These questions serve two purposes. First, they help managers focus. Second, by understanding managers' roles, the evaluation specialist is better equipped to help the managers articulate the decisions and actions to be taken throughout the life of the project and identify the information needed for those decisions.

In helping managers identify their priority questions, the specialist may find considerable overlap among questions. This will help pare down the number of questions to be investigated over the life of the project.

Managers' questions concerning output, purpose, and goal achievement usually fall into two major categories. First, most managers will want to know what is happening. For example:

- Inputs/outputs. Are inputs and outputs falling into place or being achieved as planned?
- Purpose. To what extent is the project purpose being achieved? Are inputs/outputs contributing to purpose achievement? What are the short-term effects on beneficiaries? What has been the incidence of benefits? What have been the project trends with respect to institution building and service delivery?
- Goals. To what extent will the project goals be

achieved? What has been the impact of the project?
Second, for each of these categories managers may also want to know "why and how." They may want to know why and how output, purpose, or goal achievement is or is not occurring as planned.

Boxes 6 and 7 present some common questions that managers have.

It may be useful to ask the following to guide the selection of managers' priority questions: (1) What are the major areas of uncertainty about inputs and outputs and the likelihood of purpose/goal achievement? (2) What are the major decisions which might have to be made during implementation for which is needed for informed decision-making?

The design process of a data collection, monitoring, and evaluation system for an A.I.D. agricultural project in the Caribbean included a very useful approach for identifying managers' questions. Project managers from the three

Box 6. Managers' Questions: "What Is Happening"?

INPUT-AND OUTPUT-LEVEL QUESTIONS

Agriculture: Administrative records show that new technological packages have been produced; are the new technological packages being adopted by farmers?

Health: Administrative records show that health clinics have been built and staffed; are health services (e.g., nutrition, education, oral rehydration therapy, immunization) being used?

Irrigation: Administrative records show that irrigation canals have been built; are irrigation systems efficiently providing the volume and rate of water required by farmers?

Social Forestry: Administrative records show that woodlots have been established and have received seed; are seedlings surviving and are woodlots producing fuelwood?

PURPOSE-LEVEL QUESTIONS

Agriculture: Are the technological packages contributing to higher yields and incomes?

Health: Are the health- and nutrition-related behaviors (e.g., knowledge of oral rehydration therapy, use of growth monitoring) of beneficiaries changing as anticipated?

Irrigation: Are the irrigation systems distributing water equitably to farmers?

Social Forestry: Do the poor have access to the fuelwood produced for home use or for market?

GOAL-LEVEL QUESTIONS

Agriculture: To what extent have production and yield increased and quality of life improved in the project area?

Health: To what extent have infant/child nutrition status and morbidity improved?

Irrigation: To what extent have production and yield increased and quality of life improved for small farmers?

Social Forestry: Has access to woodlot production increased employment and quality of life for the poor?

Box 7. Managers' Questions: "Why and How"?

INPUT- AND OUTPUT-LEVEL QUESTIONS

Agriculture: Why are some farmers adopting the new technological packages and some not?

Health: What factors are responsible for low utilization of health services?

Irrigation: Why are some farmers not receiving the required rate and volume of water?

Social Forestry: Why are seedlings surviving in some villages and not in others?

PURPOSE-LEVEL QUESTIONS

Agriculture: Why have incomes and yields increased for some participants and not for others?

Health: Why are some participants changing their nutrition and health behaviors and others are not?

Irrigation: What factors are responsible for equitable distribution of water in some villages? Can these factors be replicated in villages where water distribution is less equitable?

Social Forestry: What factors prevent the poor from having greater access to the fuelwood being produced on village woodlots?

GOAL-LEVEL QUESTIONS

Agriculture: What factors were most responsible for production and yield increases?

Health: What factors have prevented greater improvements in nutrition status and morbidity?

Irrigation: Why has production increased more in some project areas than others? What are the major factors contributing to

improvements in quality of life?

Social Forestry: What factors have impeded greater improvements in employment and quality of life for the poor?

organizations which would be involved in the project --A.I.D., the implementing agency, and the local university -- attended a 2-day workshop during the design phase. The purpose of the workshop, conducted by the design team monitoring and evaluation specialist, was to identify managers' priority questions. Apparently the managers identified useful and relevant questions for data collection.^{10} This approach may be more useful than simply having the specialist interview individual managers. A workshop provides a forum for debate and facilitates the building of a consensus on key management and impact questions. This is not possible in one-on-one interviews with numerous managers.

^{10} The data generated by the information system were critical for the future of the project. Because the data showed that extension workers were having a positive effect in project areas, the project was extended.

3.2.4 Identifying Key Indicators and Administrative Data To Answer Managers' Questions

Many host country implementing agencies collect an abundance of data through administrative records. Some of these records may contain valuable information on indicators of progress and performance. However, many are simply routine reports which often "pay little attention to project implementation and negligible attention to evaluation of impact, tending ritually to record statistics of trivial planning value" (Chambers, quoted in Morss and Gow 1985, 189) (e.g., statistics on finance management and attainment of physical targets).

Regular analysis of administrative data is particularly valuable when managers want information on trends or changes in a specific condition or phenomenon over the life of the project. Many, but not all, managers' questions about project implementation progress and performance can be answered by observing a specific indicator over time. (An indicator is a measure of a problem or condition; Rossi and Freeman 1982.) For understanding the progress of a development project, it is most helpful to receive information on the indicator regularly throughout project implementation. This is sometimes referred to as time-series data. Appropriately selected and analyzed time-series data reflect changes in project conditions and assist managers in understanding progress and performance trends. Some common indicators are shown in Box 8.

The specialist's first task is to identify a select number of critical indicators of progress and performance that address managers' priority questions. Then, the specialist must examine existing administrative data to determine if they adequately

provide the needed information on these indicators. If not, the specialist will have to work with counterparts to modify the approaches and formats for data collection.

Ideally, more focused, limited, and useful administrative data will be the result. Some administrative data can be analyzed and used on the spot by field staff and then forwarded to the monitoring and evaluation unit for further analysis. The results of the analysis will then be provided to the previously identified users.

Box 8. Common Indicators of Project Progress and Performance

Sector	Illustrative Indicators
Health	Morbidity, mortality, and service utilization rates
Agriculture	Technology adoption and agricultural yield
Population fertility	Contraceptive prevalence and rates
Nutrition	Children's weight gain
Irrigation	Timeliness and volume of water distribution and agricultural yield
Institution Building	Manpower development, staffing patterns, and turnover rates
Roads	Transportation costs, and access to social, agricultural, and health services{a}

{a} The bibliography at the end of this report contains references on evaluation methodologies categorized by sector. Many of these references discuss specific indicators or proxy indicators.

To identify appropriate indicators, it is useful to examine each question managers have in terms of the "pieces of information" that could help provide the answers. The pieces of information are the indicators. For example, a manager might ask, To what extent has progress been made in providing more reliable water service?

In selecting appropriate indicators, the specialist would try to identify what constitutes "reliable water service": for example, fewer breakdowns, quicker service when breakdowns occur, increase in the number of days that the water schemes are functioning, more frequent water-quality tests, and more dependable water quality. This grouping is easily turned

into the following list of indicators:

- Total number of breakdowns during a 6-month period
- Average number of days of each breakdown
- Average number of days that schemes function without a breakdown during a 6-month period
- Average number of water-quality tests conducted per scheme during a 6-month period
- Percentage of tests conducted that indicates acceptable water quality

In addition to identifying indicators and determining the usefulness of existing administrative data and data formats, the specialist will have to work out the following:

- Procedures for and frequency of data collection (which agency staff should fill out the forms, how frequently they should send them to the monitoring and evaluation unit)
- Locus of responsibility and procedures for feedback of analytical results to managers and the planning unit (e.g., a monthly report, a biannual presentation of analysis results by monitoring and evaluation staff, an annual conference or workshop)

Box 9 shows a format for maintaining administrative records that was developed during negotiations with the Government of India for the A.I.D./World Bank India National Social Forestry Project. Forestry Department staff will fill out the forms to report on progress -- with respect to area planted, use of fertilizers and pesticides, and seedling survival rates -- and then forward them to the State monitoring and evaluation units. The monitoring and evaluation units will aggregate and analyze the data annually and send the results back to the users.

Box 9. Sample Format for Maintaining Administrative Records

Species

	Age of Trees in Years									
	1	2	3	4	5	6	7	8	9	10

Number of farmers reporting - - - - -

Average area planted (ha) - - - - -

Average number of

seedlings planted
per hectare - - - - -

Proportion of farmers
applying fertilizers (%) - - - - -

Average number of
times pesticides
applied since planting - - - - -

Average number of times
fertilizer applied
since planting - - - - -

Percentage surviving (%) - - - - -

Average height (meters) - - - - -

Average girth at base
(cms) - - - - -

3.2.5 Selecting Other Appropriate Methods To Answer Managers' Questions

Mission and counterpart staff may decide that certain priority questions require more intensive investigation over the life of the project. They will then have to select appropriate methods for answering these questions.

At this point, managers and the specialist should consider how quantitative and qualitative methods might best be combined to provide information for management decision-making. The information in Box 10, which is a hypothetical example of a project data gathering strategy, should be studied carefully. It shows how various data gathering approaches -- analysis of administrative data, small-scale surveys, rapid appraisals, and case studies -- can be combined to give managers the information they need. The chart in Box 10 also shows how the results of planned data collection efforts (e.g., annual small-scale surveys) can sometimes trigger unanticipated questions. The chart shows how these questions can then be answered quickly by using rapid, low-cost methods.

To better understand how methods and approaches can be combined to answer managers' questions, one must first review the various methods and approaches and the circumstances under which they might be selected.

Methods of Data Collection. The major data collection methods are as follows:

1. Census and sample surveys. Census and sample surveys differ in that the former requires a complete enumeration of all the units in a population, whereas the latter uses a randomly drawn representative sample, from which researchers generalize

about the whole population. Sample surveys are therefore more economical than are censuses.

Well-designed and efficiently administered sample surveys can provide rich, quantitative data on a variety of subjects of significance to a project. They can help researchers to identify the characteristics of the target populations or its subgroups and their needs and requirements. Moreover, sample surveys can provide data about the effectiveness of the intervention to assess its overall effects.

The usefulness of surveys does not necessarily depend on a large sample size or the coverage of numerous variables. In fact, a small sample survey based on a modest sample and having a few variables can often be as effective and useful as a larger one.

Box 10. Combining Data Gathering Methods To Answer Managers' Questions: Hypothetical Agriculture Research and Production Project

This chart presents a suggested data gathering, monitoring, and evaluation strategy for a hypothetical agriculture research and production project.

Year 1 of Project: Data Gathering Approaches

1. **Administrative Records.** Regularly submitted administrative records provide information on (1) the number of production-oriented experiments and trials, (2) the number of improved varieties produced, and (3) the number of technological practices developed.

Results and Feedback. Analysis by monitoring and evaluation unit shows all outputs (above) produced as planned.

2. **Small-Scale Sample Survey on Production.** A small-scale survey is conducted on 25 farms in each of four districts to gather data on yield, production, and level of use of new technology.

Results and Feedback. Baseline quantitative data on yield, production, and level of use of new technology is provided to managers.

3. **Informal Survey on Quality of Life.** To gather quantitative and qualitative data on quality of life, an informal survey using observation techniques and a checklist for interviews is conducted in two villages in each of four participant districts and two villages in two nonparticipant districts. Fieldwork and analysis are completed in 8 weeks.

Results and Feedback. Analysis provides qualitative and quantitative data on prosperity indicators (e.g., housing quality, availability of potable water and electricity, use of bicycles and motorbikes, and food consumption habits).

Year 2 of Project

1. Administrative Records. Records on the same indicators as those selected for Year 1 are submitted regularly. Analysis by the monitoring and evaluation unit shows all outputs were produced as planned.
2. Small-Scale Sample Survey on Production. The survey is repeated and an additional question is added: Are farmers adopting the improved varieties and new technologies?

Results and Feedback. For 50 percent of farmers, quantitative data show that yields, production, and adoption have increased; for the other 50 percent, no increase. A decision is made to undertake a rapid, low-cost study using key informant and group interviews.

3. Rapid, Low-Cost Study. An anthropologist and an agronomist spend 6 weeks in villages where there is no production increase gathering qualitative and quantitative data.

Results and Feedback. Analysis reveals that extension is extremely weak in these villages. Information is not getting to farmers. Analysis also shows that 25 percent are oilseed farmers, for whom the technological packages are not relevant. Participation of farmers in planning the research is weak.

Action. Managers work with the Extension Department to ensure that these villages receive needed information. Managers develop strategies to increase farmer participation in research planning.

Year 3 of Project

1. Administrative Records Submitted. Records show only 50 percent of trainees have returned to agricultural research stations as planned. Need to undertake small-scale survey to investigate why.
2. Small-Scale Survey. Two organizational development specialists spend 1 month conducting key informant interviews.

Results and Feedback. Analysis of qualitative data

shows that the Agricultural Department has not provided salary increases and other benefits as planned. Trainees have accepted employment at other institutions.

Action. Managers work with the Agricultural Department to ensure that salary and benefits are increased during the next year as originally planned.

3. Small-Scale Survey on Production. The survey is repeated.

Results and Feedback. Analysis shows that most farmers have increased production and yields. However, farmers feel that income has not increased as rapidly as planned. Managers need to know why. An informal survey is undertaken to answer these questions.

4. Informal Survey. One agricultural economist spends 6 weeks interviewing farmers and gathering qualitative data to determine why farmers believe that income has not increased.

Results and Feedback. Analysis of qualitative data shows that marketing arrangements are not adequate. A better road is needed to get produce over the mountains to the market.

Action. Managers contact the Transportation Department to inform them of transportation needs in the area. A.I.D. considers support for a road construction project in the area.

5. Informal Survey on Quality of Life. The survey is undertaken again in the same villages in which it was undertaken in year 1 of the project. Fieldwork and analysis are completed in 8 weeks.

Results and Feedback. In villages with the highest rates of adoption of new technological practices, quality of life has improved. There is a higher percentage of improved housing quality, greater number of potable water installations, increased use of electricity, increased number of bicycles and motorbikes, and increased consumption of meat and fresh vegetables. This is not the case in participant villages where adoption is low. In these villages and in nonparticipant villages, prosperity indicators have not changed in 3 years.

Action. This information reconfirms the need to ensure that extension workers work with villages that are not adopting new practices. Project managers contact Extension Department.

2. Participant observation. This method requires that the

researcher(s) stay in the field and directly observe the phenomenon under study. The researcher lives like a member of the observed group or organization, trying to experience reality as they do. In addition, the observer conducts formal and informal interviews and gathers secondary data. The participant observation method provides deep insights that might otherwise be overlooked. An advantage of this method is that the findings and conclusions are empirically grounded. Although participant observation may be time-consuming, it can generate useful interim information.

3. Case studies. Case studies are designed to provide an in-depth analysis of select phenomena by tracing events over a defined period of time. This method enables researchers to look at a particular event, organization, or intervention in its broad historical context through the use of records and documents, formal and informal interviews, and direct observation. Case studies are useful for examining delivery systems or the institutions built under the auspices of an intervention. Often, a single case study is not useful. The ideal course is to conduct a series of related or comparative case studies for categorizing experiences and drawing relevant generalizations.

4. Rapid, low-cost approaches. This broad category includes a range of data gathering techniques which can generate needed quantitative or qualitative information with a modest investment of human resources and within a relatively short time span (for greater detail, see Appendix B). For practical purposes, these techniques can be conceived of as methods which provide data and information within 1 to 6 weeks with a staff of one to three professionals.

5. Secondary methods. Secondary methods use existing data (e.g., census data, clinic records) that were collected for other purposes as the basis for new analyses. Secondary methods can be used whether the original data were collected with survey or case study methods. Using secondary methods is nearly always less expensive and quicker than collecting primary data and should be considered when the data seem appropriate for meeting the manager's information needs.

Choosing Appropriate Methods To Answer Managers' Questions.

What criteria should be applied in selecting the methods that are most appropriate for answering managers' questions?

Experience shows that, in most cases, regular analysis of administrative data, small-scale surveys, case studies, and rapid, low-cost methods (rather than large-scale surveys or censuses) are the data gathering and analysis approaches that will be most useful and efficient for A.I.D. and counterpart managers for the following reasons.

- For the majority of A.I.D. managers, a high degree of precision is relatively unimportant, whereas rapid

feedback is very important.

- In many cases, A.I.D. managers have questions in areas not amenable to precise quantitative measurement and analysis (e.g., questions concerning institutional performance, quality of life, the implementation process, behavioral change, or effects on beneficiaries).
- A.I.D. and especially counterpart staff usually do not have adequate financial or human resources to support higher cost analysis.
- Without extensive training, it is unlikely that counterparts can replicate the sophisticated analytical techniques required for large surveys and censuses once A.I.D. assistance has terminated.

For all these reasons then, it is recommended that in most cases A.I.D. managers use small-scale surveys or administrative record analysis if they want to know "what is happening." If they want to know "why and how," case studies and rapid, low-cost studies would probably be most appropriate. The specialist will work with A.I.D. and counterpart staff to determine which methods are most appropriate for answering managers' priority questions and how these methods can be combined to provide needed information.

During project design, the use of traditional methods -- large scale, multiround surveys or censuses -- can be considered. The following are some conditions under which these methods might be appropriate:

- A high degree of precision is required.
- There is a dearth of statistical sectoral data and analytical capabilities, and A.I.D. anticipates extended support for that sector.
- A.I.D. will be testing alternative approaches or technologies throughout the project, and statistically accurate information is required.

However, these conditions do not usually apply to most A.I.D. projects.

3.2.6 Clarifying Counterpart Support and Involvement

The effectiveness of the information system will be dependent largely on counterpart involvement and support. This means that A.I.D. must reach agreement with counterpart agencies during the design stage concerning the extent of their involvement. The monitoring and evaluation specialist will have to work with A.I.D. and counterparts to reach agreement on which counterpart agencies will be involved, as well as the following:

- Number, type, and level of field staff who will be designated by the counterpart agency to fill out the necessary forms for gathering administrative data and then to forward them to the monitoring and evaluation unit
- Number, type, and level of supervisory staff to oversee these procedures (to ensure accuracy, completeness, and timeliness)
- Whether counterpart agencies will permit the designated staff to participate in A.I.D.-supported short-term training (workshops, seminars) to increase the effectiveness of their participation in the information system

As part of these negotiations, the specialist will also have to work with A.I.D. and counterpart staff to identify the institutional locus and responsibilities of the monitoring and evaluation unit(s).

The monitoring and evaluation unit provides an opportunity for developing host country planning and analytical capabilities. An important part of the development process is building the institutional capabilities of counterparts to measure, understand, and react in a programmatic way to socioeconomic change. This in itself is an important goal. Thus, this step is a significant one in the process of developing the monitoring and evaluation system.

There are two main items that will have to be negotiated.

First, where will the monitoring and evaluation unit(s) be located institutionally? In previous years, monitoring and evaluation units were generally located in an external institution to avoid bias. The consensus now is that the unit's potential contribution to decision-making and feedback, as well as its long-term sustainability, will be greater if the unit is an integral part of project operations. This suggests that the unit(s) should be located in the counterpart implementing agency. Second, the specialist, working with counterparts, will have to identify the major functions of the monitoring and evaluation unit and how it should be staffed (number, level, and type of disciplines). The need for long- and short-term technical assistance for this unit should also be determined and included as part of the project design and implementation plan.

3.2.7 Developing Feedback Procedures

The study of the six highly successful development projects found "timely feedback" to be a critical element of project success. Feedback facilitated improved performance by providing managers/districts with regular information on their performance vis-a-vis others (Paul 1982, 211).

Inclusion of a feedback mechanism is what distinguishes an effective information system from pure research. In developing

the overall information system, the specialist, A.I.D., and counterparts must give considerable thought to how this mechanism will work. It is the link which transforms evaluative studies into an information system for improving performance. In many situations, however, even though a feedback mechanism exists, the feedback itself is useless. Effective feedback requires relatively sophisticated analytical capabilities that can turn raw data into action-oriented reports for management. However, many monitoring and evaluation units lack the analytical capabilities for interpreting key data, for summing up critical findings in the context of goals and purposes, and for identifying action-oriented recommendations.

Given that limited capability for well-focused interpretation and analysis is a major management shortcoming in many developing (and developed) countries, perhaps the key task of an expatriate adviser and designated counterparts should be the preparation of periodic reports which document progress and performance (based on analytical results) as they relate to broader goals and purposes. Thoughtful, analytical reports would create a powerful demand for data throughout the life of the project and would enhance data use for decision-making.

In addition to designating expatriate and counterpart staff who are specifically responsible for ensuring meaningful feedback, other steps to enhance feedback might include the following:

- Establishing a project planning committee (composed of key members of the planning unit and the monitoring and evaluation unit) to meet at regular intervals to review feedback reports and their implications for project management
- Ensuring that timeliness and quality of feedback are evaluated routinely as part of annual project assessments and management reviews
- Including in project covenants an outline of procedures for reporting analysis results to counterparts and A.I.D.

3.2.8 Developing the Budget

The specialist should develop a budget specifying both the total cost of the data collection, monitoring, and evaluation system and the cost of various component activities. As a general rule, the cost of an information system should be between 0.5 percent and 3 percent of total project costs, depending on the significance of the project and the need for low- or high-cost options for data gathering, processing, and analysis (World Bank 1980).

Adequate resources should be allocated for both data collection efforts and for data processing and analysis procedures. In the past, the resources needed for data processing were usually considerably

underestimated, with the result that reams of data were collected, but minimal amounts were analyzed because the staff and financial requirements for analysis had been grossly underestimated.

A detailed budget identifying both A.I.D. and counterpart funds or resources should be included in the Project Paper. (Specific budget line items are identified in Appendix A.)

3.2.9 Additional Tasks

Mission staff may want the specialist to undertake additional related tasks that should also be completed before implementation begins. These tasks might include the following:

- Drafting a handbook or guidelines manual describing the project's monitoring and evaluation system
- Drafting scopes of work for long- and short-term technical assistance for the monitoring and evaluation unit
- Preparing an action plan for the monitoring and evaluation unit for the first year of the project
- Developing all formats for collection of administrative data in collaboration with counterparts
- Developing a schedule for reporting to the users the results of key analyses

APPENDIX A

ISSUES CHECKLIST FOR PREPARING PROJECT PAPER DATA COLLECTION PLANS

All A.I.D. Development Assistance and Economic Support Fund projects should include a data collection, monitoring, and evaluation system. The Project Paper should include a data collection plan which explains how the information system has been designed to be an integral element of the project and its implementation. This plan should emphasize the following features:

- Data for decision-making. The plan should clearly identify the types of data that will be gathered and analyzed for decision-making and impact assessment.
- Host country support. The plan should identify the components of the information system which will be supported by the host country (e.g., counterpart agency staff for gathering select administrative data, staff for the monitoring and evaluation unit).

- A.I.D. support. The plan should identify the components of the monitoring and evaluation system which will be supported by A.I.D. (training in data collection and analysis methods, actual data collection and analysis, long- and short-term technical assistance for the monitoring and evaluation system).

An issues checklist for Project Paper data collection plans is outlined below.

1. The Users of the Information. This section should specify the following:

- The users of the information (counterpart field and planning staff, A.I.D. staff)
- Users' organizational affiliation

2. Institutional Locus. This section of the plan should specify the following:

- Whether the project will create a new monitoring and evaluation unit or enhance an existing unit
- The agency in which the monitoring and evaluation unit will be located
- The number and type of staff for the monitoring and evaluation unit

3. Project Goal, Purpose, and Output Questions, Indicators, and Methodologies. This section should reference the project's logical framework and the section of the Project Paper that discusses purpose, goals, inputs, and outputs. This section should also identify the following:

- Managers' priority output, purpose, and goal questions (specifying high-, medium- and low-priority questions may help ensure that only genuinely needed information is collected).
- The key indicators which will be used to answer managers' questions.
- The data collection methodology which will be used to provide information on these indicators and the procedures for applying it. If the methodology selected is "administrative record analysis," the plan should indicate whether new formats for administrative data will have to be designed and how these will be developed.

4. Special Studies. For questions which will require more intensive investigation over the life of project, this section should specify the following:

- The types of studies and combination of methods that will be used for gathering and analyzing data to answer managers' questions
- The type of data that will be gathered
- The frequency of these studies and who will conduct them (the monitoring and evaluation unit or local firms, universities, or research institutions)

5. Counterpart Support and Involvement. This section should identify the following:

- The counterpart implementing agencies which will be involved in data collection
- The nature and level of their involvement (e.g., staff to prepare administrative data or for the monitoring and evaluation unit, and their approximate numbers and type)

6. Feedback Procedures. This section should specify the procedures which will be used to generate feedback (e.g., quarterly or annual reports, biannual workshops).

7. Budget Development. This section should identify specific budget line items to support the monitoring and evaluation system, or it should reference the overall project budget which includes this information. Budget line items might include the following:

A.I.D.

- Long-term technical assistance (e.g., resident monitoring and evaluation adviser -- 24 months)
- Short-term technical assistance (short-term consultancies to advise on or participate in specific data collection and analysis efforts)
- Training in data collection and methodologies: long-term (university training) and short-term (seminars, workshops, conferences)
- Commodities (e.g., calculators and computers if appropriate)
- Funds for data processing, if appropriate

Host Country

- Counterpart agency field staff to fill out administrative data forms (e.g., 100 field staff)
- Counterpart agency supervisors (e.g., 10 supervisors)

- Office space for monitoring and evaluation units (e.g., three district units, one central unit)
- Staff for monitoring and evaluation units (e.g., four Ph.D.s, eight M.A.s)

8. Evaluation Schedule. This section should specify the following:

- The points in the project life at which external evaluations will be conducted
- The purpose of these evaluations
- The type of empirical data generated by the monitoring and evaluation system which will be available for review by the evaluation teams

Formats for hypothetical monitoring and evaluation plans for Project Papers are included in Appendix C.

APPENDIX B

DATA GATHERING TECHNIQUES FOR CONDUCTING RAPID, LOW-COST STUDIES

The most common data gathering techniques used in conducting rapid, low-cost studies are discussions with key informants, group interviews, guided interviews, observation, informal surveys, and rapid, non-random sample surveys. These techniques are described in greater detail below.^{1}

1. Key informants. In the key informant method, the researcher seeks the desired information from a few people in a community or organization who, by virtue of their position and role, are knowledgeable about the phenomenon under study. Key informants are usually those who are better off, better educated, and more powerful (e.g., the village headman, local school teachers, or the head of the local women's organization). Although there are dangers of bias (which can be offset by also talking to the disadvantaged and less powerful members of the community), these individuals can provide valuable insights. This technique can be very useful, for example, in obtaining information concerning the following:

- Anticipated and unanticipated project effects
- Village-level constraints to effective implementation

2. Group interviews. This social science technique brings together a small group of people for an extended discussion cued by a series of questions or discussion topics put forward by the investigator. This technique is also referred to as "focus group" interviews. The discussions usually last 30 minutes to 1 hour. A degree of rigor is imposed by conducting group interviews

with both project participants and nonparticipants. One advantage of group interviews is that there is a tendency for mutual checking. That is, if one group member misrepresents certain topics, the rest of the group usually speaks up to correct any false impressions. A disadvantage is that sometimes a few individuals or special interests may dominate the discussion. The group interview technique can be useful in obtaining information concerning the following:

- Participants' perceptions of project benefits and equity
- The degree to which certain project components are working out as planned
- Village participation in and understanding of the project

3. Guided interviews. In conducting guided interviews, the interviewer uses a checklist of questions as a flexible guide rather than a formal questionnaire. Not all points are raised in all interviews, but a composite picture usually emerges after several interviews. The checklist has been found to be an effective tool for quickly diagnosing farming problems and opportunities. It is a valuable technique for investigators with professional training but without extensive field experience. A drawback of this technique is the difficulty in organizing the data generated from these discussions. The guided interview can be useful in obtaining information such as the following:

- Farmers' perceptions, problems, and use of new technological packages
- Families' use and acceptance of family planning methods
- Families' use of health services
- Village/household acceptance and use of potable water installations

4. Observation. Observation is fundamental to the investigation of almost any phenomenon. Observation techniques involve viewing project activities. Observations of project results or activities can be obtrusive (everyone knows why the evaluator is there) or unobtrusive (people are not told the real purpose of the visit). For evaluative purposes, observation must systematically try to answer specific questions. Evaluators need to agree on time (how much is adequate at each site?) and focus (what will be observed?).

Observation is useful for gaining insight into behavior. To obtain information on the sanitation practices of villagers, it may be more useful to observe (unobtrusively) whether soap is available in washing areas than to ask directly. A variation of this approach is called "participant observation." Observers participate in project activities and prepare regular reports on

their perceptions. The advantages of observation are that it is easy to do, requires minimal preparation, and is useful in identifying unintended, as well as intended, project outcomes. A disadvantage is that the analysis depends heavily on the perceptiveness of observers and will be influenced by their biases. These deficiencies may be partly compensated for by carefully selecting a balanced team of observers.

Observation can be useful in obtaining information concerning the following:

- The nature and effectiveness of the implementation process
- Villager participation in project activities
- Farmer contributions to operation and maintenance

5. Informal surveys.^{2} Both quantitative and qualitative data can be gathered through informal surveys incorporating innovative features. There are two principal types of informal surveys.

The first type is based on the use of proxy indicators. For example, to assess quality of life, a researcher may gather information on household roof and floor materials and quality rather than attempt to gather precise household income data. By using innovative indicators, the investigator tries to get a general idea of the situation without undertaking comprehensive surveys that directly measure standard indicators. This approach is quite new and its usefulness remains to be tested. Another promising approach, which has already proven useful in farming systems research,^{3} can be termed "informal, multidisciplinary surveys." In such surveys, a multidisciplinary team (e.g., agronomists, economists, anthropologists) spends 1-2 weeks in the project area interviewing farmers and community leaders. Team members compare notes, exchange ideas, and write up their report. This mutual checking by all disciplines encourages accuracy and contributes to a broad-based, yet integrated perspective. In farming systems projects, for example, this type of survey has been used to orient the research program, but it can also be used to identify on-farm changes that have taken place.

6. Rapid, non-random sample surveys. Rapid, non-random sample surveys are distinguished from random sample surveys in two ways. First, the number of variables is kept to a minimum. Only a few questions are asked, and an interview can usually be completed within 5-10 minutes. Second, the norm of random sampling is abandoned in favor of a purposive sample which is deliberately kept small. Because the number of variables is limited and the sample size is small, the data can be quickly tabulated manually, thus facilitating rapid analysis. One distinctive advantage of these surveys is that they can generate quantitative data which can be statistically manipulated. Only sampling error cannot be estimated for them. More-over, because of their smaller size, non-sampling errors remain low, which enhances the validity of findings. Non-random sample surveys

are otherwise conducted like other surveys.

Rapid, non-random sample surveys can be useful in providing information concerning the following:

- Agricultural production levels and adoption of new technologies
- Use of and access to health services
- Irrigation systems operation and maintenance

{1} This section draws, in part, on two sources: Robert Chambers, "Shortcut Methods for Information Gathering for Rural Development Projects," Paper for World Bank Agriculture Sector Symposium, January 1980; and Daniel Santo Pietro (ed.), Evaluation Source-book for Private and Voluntary Organizations, American Council of Voluntary Agencies for Foreign Service, Inc., 1983.

{2} The discussion of informal surveys and rapid, non-random sample surveys is taken from Krishna Kumar, "Rapid, Low-Cost Data Collection Methods for Project Design, Monitoring and and Evaluation: Outline of a Proposal," A.I.D., Center for Development Information and Evaluation, July 1985.

{3} Dr. Peter Hildebrand has developed and used this approach at the Institute de Ciencia Tecnologia Agricola (ICTA) in Guatemala. (See "Summary of the Sondeo Methodology Used by ICTA," prepared for the Workshop on Rapid Rural Appraisal, 26-27 October, Institute of Development Studies, University of Sussex, 1979.)

APPENDIX C

SAMPLE DATA COLLECTION, MONITORING, AND EVALUATION PLANS FOR PROJECT PAPERS

1. BURMA: AGRICULTURE RESEARCH AND DEVELOPMENT PROJECT (492-0012)

INTRODUCTION. As stated in the Project Paper, "Little has been written on rural society in Burma and how the development process affects rural people. Farm family profiles do not exist. Accurate production, income, savings, and consumption data are difficult to obtain." To implement this project effectively, data on these and other topics are essential for project decision-making. Therefore, this project (1) supports the development and staffing of a data collection, monitoring, and evaluation unit within the Agriculture Research Institute (ARI) and (2) includes a preliminary framework (below) for a data collection, monitoring, and evaluation plan.

USERS OF THE INFORMATION. The major information users will be the Project Management Committee, researchers, and the Planning Unit at ARI; extension agents; and farmers. These groups, working with long- and short-term consultants, will develop a comprehensive data collection, monitoring, and evaluation plan for the project during the first year of implementation.

INSTITUTIONAL LOCUS. One objective of this project is to develop the capacity of the data collection, monitoring, and evaluation unit in ARI to plan and implement project data collection and analysis. This unit will be staffed by two agricultural economists and two anthropologists, who will receive training under the project between years 1 and 3. During this time, it will be the responsibility of the project team leader to oversee data collection and analysis. By the fourth year, with continued short-term technical assistance, the four staff members will begin to plan, implement, and supervise the data collection and analysis for this project.

PROJECT GOAL, PURPOSE AND OUTPUT QUESTIONS, INDICATORS, AND METHODOLOGIES.

The data collection unit will examine the following questions during implementation. Indicators and methods are identified below.

Project Goal. The goal of this project is to increase agricultural productivity by increasing per-acre yields of maize, oilseeds, and other crops.

- Goal-level question: Using farm households as the unit of analysis, to what extent is per-acre yield in maize, oilseeds, and other crops increasing in the four agro-climatic zones?
- Indicators: Per-acre yields in maize, oilseeds, and other crops.
- Data collection methodology: Examination of administrative records. Data on per-acre yields are probably maintained in the Agriculture Ministry's administrative records.

If not, procedures for collecting this information will be developed. ARI's monitoring and evaluation unit will be responsible for analyzing these data, preparing an annual report, and sending this report to the users identified above.

Project Purpose. The purpose of the project is to strengthen ARI's capability to plan, organize, and carry out production-oriented research in maize, oilseeds, and other selected crops.

- Purpose-level question: To what extent has ARI's capacity to plan, organize, and carry out production-oriented research in maize, oilseeds, and other selected crops been strengthened as a result of this project?

- Indicators: Number of trained staff (and staff trained in maize and oilseed research); development of and adherence to manpower plans; degrees attained by researchers; relevance of research to agricultural needs; linkages to international centers; and turnover rates.
- Data collection methodology: Examination of ARI's administrative records and interviews with staff members. Data on purpose-level indicators are not currently a part of administrative records. To gather data on these indicators, one of the long-term consultants will be responsible for supervising this process during the early years of the project until the monitoring and evaluation unit is fully staffed and capable of taking on this work. In the early years this consultant will also be responsible for ensuring that this information is summarized and prepared as an annual report on the institutional development of ARI.

Project Outputs. The outputs to achieve these objectives include, among others, increased number of research-oriented experiments and trials and the development of specific agronomic practices suitable for each of the four different agro-climatic zones in which these crops are grown.

- Output-level questions: What specific agronomic practices suitable for increased production of maize, oilseed, and other crops grown in each of the four different agro-climatic zones have been developed under this project? To what extent have these practices been adopted by farmers in the four zones? What factors facilitate or hinder adoption of these practices in the four zones?
- Indicators: Number/type of specific agronomic practices developed by each research station annually; percentage of target farmers adopting these practices annually.
- Data collection methodology: Rapid, low-cost studies. To gather data on the types of agronomic practices and technological packages developed at each research station, the adoption rate by farmers, and factors facilitating or hindering adoption, rapid, low-cost studies of approximately 50-100 farmers in each zone will be undertaken annually starting in the third or fourth year of the project. Fifty to 100 farmers in each zone who have not adopted these technologies will also be interviewed. These studies will be undertaken by the data collection, monitoring, and evaluation unit, assisted by short-term technical assistants under the project. The results will be provided to the Planning Unit.

SPECIAL STUDIES

Informal Survey on Village Prosperity. An informal survey will be undertaken annually of three villages in each zone in which the majority of farmers have adopted the new technologies and three villages in which the majority of farmers have not. The purpose will not be to gather precise income data but rather to conduct an informal survey of village prosperity. An anthropologist and a sociologist will spend 8 weeks in the field gathering data and writing their report. The data gathering techniques will be largely observation and guided interviews. The researchers will examine indicators of village prosperity such as quality of housing and clothing, availability of electricity and potable water, availability of bicycles and motorbikes, and food consumption habits.

Special Study of the Extension System. This project does not include assistance for the further development of the extension system. Nevertheless, an effective extension system is of singular importance for the project. For this reason, special small-scale studies of the effectiveness of the extension system in the four zones will be conducted in the first and third years of the project. Rapid, low-cost methods will be used to assess whether the extension service is delivering appropriate, relevant, and timely information and technology to farmers in each of the four zones. Indicators might include number of extension agents in each zone, number of extension agents per x number of farmers, lag time between availability of technology on the research stations and dissemination to farmers, type and relevance of information conveyed to farmers, and use of the information by farmers.

FEEDBACK. At first, the long-term, technical-assistance consultants will be responsible for preparing an annual report which interprets the results of data analyses in light of the project's purposes and goals. Once the data collection, monitoring, and evaluation unit is developed and fully staffed, these tasks will fall to staff members. The results of all data analyses will be provided regularly to the Planning Unit so that project modifications can be made in a timely way.

BUDGET. Approximately 2 percent (US\$340,000) of the US\$17 million designated for this project has been set aside for data collection, analysis, and short-term technical assistance. Funding will be provided by the Agricultural Ministry of Burma and A.I.D. as follows:

Agricultural Ministry of Burma

-- Staff

- Ten extension agents in each of the four zones to gather administrative data
- One staff member at ARI to gather data on institutional development
- Three agricultural economists and two

anthropologists from ARI

- Office space for the monitoring and evaluation unit at ARI

A.I.D.

- 48 months of long-term technical assistance to the monitoring and evaluation unit
- 24 months of short-term, technical assistance to expedite procedural formulation and rapid, low-cost studies
- Hand calculators for data tabulation

EVALUATION SCHEDULE. The evaluation schedule and budget are set forth in the Project Paper. The results of the data collection and analysis on the questions of (1) increases in per-acre yield, (2) institutional growth of ARI, (3) development of new technological packages, (4) farmer adoption rates, (5) effectiveness of the extension service, and (6) village prosperity will be available to provide an empirical basis for the findings and recommendations of the mid-term and final impact evaluations.

2. INDIA: MAHARASHTRA SOCIAL FORESTRY PROJECT (386-0478)

USERS OF THE INFORMATION. The users of the information will be the Planning, Monitoring and Evaluation Unit in the Maharashtra Horticulture and Social Forestry Department (H&SFD), the Regional Joint Directors of Social Forestry, the State-Level Committee on Social Forestry, the Information and Technology Unit, and USAID.

INSTITUTIONAL LOCUS. The institutional locus of data collection and analysis is the H&SFD Planning, Monitoring and Evaluation (PM&E) Unit in Maharashtra, and the Information and Technology (IT) Unit in New Delhi. It will be the responsibility of the PM&E Unit to supervise the data collection effort and ensure that all records and forms are filled out accurately and completely.

The IT Unit will assist the PM&E Unit in preparing any needed forms and in training data collectors. The IT Unit will also be responsible for undertaking special studies, discussed later in the plan.

PROJECT GOAL, PURPOSE, AND OUTPUT QUESTIONS, INDICATORS, AND DATA COLLECTION METHODOLOGIES. The PM&E Unit and the IT Unit will examine the following questions during implementation of the project. Goals and purposes, as well as indicators and methods, are identified below.

Project Goal. The goals of this project are (1) to increase the supply of firewood, fodder, fruit, and building materials in rural areas; (2) to reduce the rate of deforestation; and (3) to increase rural employment.

- Goal-level questions: (1) Using the village as the unit of analysis, has the supply of firewood, fodder, and building materials increased in rural areas? (2) To what extent has the rate of deforestation decreased in rural areas?
- Indicators: (1) The level of production of firewood, fodder, fruit and building materials in rural villages and (2) the rate of deforestation in rural villages.
- Data collection methodology: Data on goal-level indicators are not currently a part of administrative records. These data will be provided to H&SFD extension agents and then to the PM&E Unit annually by each village panchayat. Providing this information annually will be a condition of the Panchayat-H&SFD Management Plan. A sample of these data will be analyzed annually by the PM&E Unit. Small-scale assessments of production and deforestation levels in a small number of these same villages will be undertaken annually to confirm the accuracy of the original analysis. This information will be consolidated by the PM&E Unit into an annual report and provided to managers and other users identified above.

Project Purpose. The purpose of this project is to develop the institutional capability of the Maharashtra Horticulture and Social Forestry Department to manage communal and private lands for increased and sustained production of forest products.

- Purpose-level questions: To what extent has the institutional capability of the Maharashtra H&SFD for managing lands for increased and sustained production of forest products increased? To what extent has the H&SFD been successful in motivating villages and villagers to participate in this project?
- Indicators: Indicators for assessing increased institutional capability are (1) number, education, and turnover rates of extension agents in each district; (2) preparation by H&SFD of manpower and staffing plans and adherence to the plans; (3) preparation of an annual plan for forestry production; (4) annual budgetary allocations to H&SFD; (5) hectares planted, seedlings distributed, and seedlings surviving, by district; and (6) increased technical knowledge of extension agents after training, as indicated by pre/post tests. Indicators for assessing capabilities of H&SFD extension agents to motivate villagers to participate in the project will include (1) number of villagers expanding their initial project size per year, (2) number of panchayat requests per year for participating in the

program, and (3) number of panchayats assuming full responsibility for village plantations under conditions of the agreement.

- Data collection methodology: Administrative records maintained by the H&SFD regional directors include information on only a few of the indicators listed above. H&SFD regional directors have agreed to reexamine the information currently contained in these records, drop those information items not useful for decision-making, and add those items necessary for tracking the above list of indicators. The H&SFD PM&E Unit will be responsible for analyzing and interpreting the data and preparing a semiannual report.

Project Outputs. Project outputs will be (1) community and private plantations established, (2) district and private nurseries established, (3) extension staff trained and placed in the field, and (4) research reports completed.

- Output-level questions: To what extent has the establishment and number of community and private plantations and district and private nurseries increased? Have staffing levels increased? Are research reports being completed accurately and on time?
- Indicators: Numbers of community/private plantations and district/private nurseries established per district per year; number of staff persons trained and deployed; results of pre/post testing of trainees; and quantity, quality, and use of research reports received.
- Data collection methodology: Extension agents will be required to provide information to the H&SFD PM&E staff every quarter on the number of plantations and nurseries they helped establish in their districts, the number of hectares planted on these plantations, and the seedling survival rate in the village. Spot checks will be undertaken by the H&SFD monitoring staff to confirm the accuracy of this information. The data will be aggregated, analyzed, and presented to the users every 6 months. Local researchers will annually assess the number, relevance, and use of research reports prepared by the IT Unit. This assessment will be presented to the users.

SPECIAL STUDIES. Rapid, low-cost studies will be undertaken to examine variations in output achievement by district in order to answer both goal- and purpose-level questions. Individual and group interview techniques will be used for these studies, which will be undertaken to identify factors that facilitate or hinder establishment of community and private nurseries and plantations. These studies may be used to compare activities and characteristics of villages that are progressing well to those of villages that are progressing more slowly. Fieldwork and analysis will be completed

in 6 to 8 weeks to ensure that H&SFD receives timely information.

In addition, special case studies will be undertaken annually by the IT Unit to examine whether project benefits are distributed equitably among male and female villagers. Equity indicators might include the type and quality of benefits actually delivered to male and female villagers in various economic strata compared to those specified in the panchayat agreement and the number and type of complaints regarding distribution of forest projects received by the H&SFD.

FEEDBACK. Included in the scope of work for the technical assistance team leader will be a condition that he or she is responsible for working with counterpart staff to ensure that data analyses are provided to the planning unit in a timely way.

BUDGET. Approximately 0.5 percent (US\$200,000) of the US\$30 million designated for this project has been set aside for data collection, monitoring, and analysis, including two scheduled evaluations. Funding will be provided by the Government of India and USAID as follows:

Government of India

- Office Space
 - Space for PM&E Unit at H&SFD
 - Space for the IT Unit in New Delhi
- Staff
 - Ten staff for the PM&E Unit in H&SFD
 - Five staff for the IT Unit
 - Five extension workers in each district, responsible for filling out all forms used for data collection

USAID

- 12 months of long-term technical assistance to the PM&E Unit by an expatriate adviser
- 12 months of short-term technical assistance to assist with data collection and analysis activities
- Hand calculators and vehicles/moterbikes for data collectors

EVALUATION SCHEDULE. The evaluation schedule and budget have been set forth in the Project Paper. The results of the data gathering and analysis of (1) forest production levels and

deforestation rates; (2) institutional growth of H&SFD; (3) number of plantations established, hectares planted, seedling survival rates; and (4) relevance of applied research will be available to provide an empirical basis for the mid-term and final evaluations.

3. INDIA: MADHYA PRADESH MINOR IRRIGATION (386-0483)
USERS OF THE INFORMATION. The main users of the information are the minor irrigation committee, Special Appraisal and Supervision Cells (SASC), and the planning units of the Irrigation Department (ID) of Madhya Pradesh; planning units of the Agricultural Department (AD); and USAID project and program officers.

INSTITUTIONAL LOCUS. The monitoring and evaluation activities will be carried out by the Implementation, Operation, Monitoring and, and Evaluation Division (IOMED) of the SASC of the ID. IOMED has responsibility for supervising the data collection and analysis effort, for providing needed assistance, and for submitting all special studies on time. IOMED will collect and analyze all project goal-, purpose-, and output-level data; prepare an annual report; and provide timely feedback to the principal information users identified above.

FEEDBACK. To ensure that the data collected by IOMED are analyzed and presented in an intelligible and action-focused format, the project provides for technical assistance to the IOMED staff. A detailed scope of work will specify the nature of the technical assistance tasks. IOMED staff will collect the information, analyze the data, prepare the report, and present the information to the data users and project managers at specified time periods.

PROJECT GOAL, PURPOSE, OUTPUT QUESTIONS, INDICATORS, AND DATA COLLECTION METHODOLOGIES. IOMED will examine the following questions during project implementation.

Project Goal. The project goal is to increase rural production (food grain and fiber) and income by providing improved on-farm employment opportunities.

- Goal-level question: Using the rural household as the unit of analysis, to what extent have production (of food grain and fiber) and prosperity increased among participating farmers?
- Indicators: Yield of food grain and fiber per hectare per household; proxy income indicators such as use of electricity, motorbikes, and bicycles; quality of housing; and food consumption habits.
- Data collection methodology: Examination of administrative records. If no records exist, procedures will be developed to ensure availability of data throughout the life of the project. Analysis of administrative data will be complemented by the use of rapid, low-cost studies. Individual and group interviews, using a small sample of about 5 to 10 farmers in

each minor irrigation system, will focus on trends in the quality of life and on changes in consumption patterns of the participants. This information will be collected annually by the IOMED staff and analyzed within 6 to 8 weeks.

Project Purpose. The project purpose is to increase irrigation coverage and efficiency through improved management and technology.

- Purpose-level question: In what ways have better management techniques and technology application contributed to increasing irrigation coverage and efficiency?
- Indicators: Irrigation coverage for each minor irrigation system; water-use efficiency for each minor irrigation system. (Each minor irrigation system will improve water-use efficiency through monitoring water use, preventing overwatering, and avoiding wasteful water use, such as using the irrigation system before or after precipitation.)
- Data collection methodology: Data on purpose-level indicators will be collected and maintained by each farmer organization. Maintenance of records will be required of each unit and included in the articles of incorporation. IOMED staff will gather and analyze these data annually. A combination of methods will be necessary to gather technical data concerning irrigation coverage and efficiency of water use. Data collected from periodic observation and monitoring of water-use efficiency (with engineering technical assistance) will be used to derive measurements of periodic water flows throughout the system. Measurements, in turn, will be analyzed to show trends indicative of progress (or lack of progress) toward increasing irrigation coverage and efficiency.

Project Outputs. (1) Minor irrigation systems planned, designed, and constructed; (2) ID and AD staff trained in "service" management systems; (3) local farmers organized for purposes of operating and maintaining minor irrigation systems; (4) pilot projects set up, using alternative technology and management modes; (5) demonstration chaks (plots) established for disseminating tested technology; and (6) socioeconomic studies prepared.

- Output-level questions: The most important output question which will be investigated on a regular basis is, To what extent are farmer organizations contributing to increased farmer participation in planning, designing, constructing, and maintaining the irrigation systems?

Other questions are (1) To what extent has the target of designing and constructing 50 minor irrigation systems been reached? (2) What is the status of the 1,525 in-country trainees and of the 40 officers trained in the United States? (3) To what extent has the target of organizing 50 farmer groups

been met? (4) Have two pilot projects (the target) been set up for testing alternative technologies and management modes? (5) How many of the 200 planned demonstration chaks have been completed? (6) What is the status of the 10 planned socioeconomic studies?

- Indicators: (1) Comparison of outputs achieved versus output targets on a biannual basis (e.g., number of irrigation systems constructed during the first 6 months, the second 6 months, and so on, that are operational) and (2) farmer participation data on the following:
 - Size of farmer membership each year
 - Socioeconomic status and gender of participating farmers
 - Frequency of farmer meetings
 - Farmers' attendance at meetings
 - Quantity and quality of feedback from farmer groups to AD and ID staff
 - Acceptance of farmer groups' recommendations by AD and ID staff
 - Evidence of commitment to operate and maintain irrigation systems
 - Willingness to pay water-user fees
- Data collection methodology: Information on some output-level indicators can be obtained from the administrative records of the implementing agencies and from the water-user organizations.

Rapid, low-cost studies, using observation and interview techniques, are recommended for collecting data on various aspects of farmers' participation in water-user organizations. The data collection effort should concentrate on identifying social and cultural impediments to participation, social and economic factors that constrain or enhance maintenance and sustainability of water-user organizations, problems associated with setting up cost schedules, and methods for the collection of fees. A comparative analysis of successful and unsuccessful water-user organizations should be undertaken.

BUDGET. The data collection, monitoring, and evaluation activities will require about 1 percent (US\$700,000) of total projected project costs of about US\$81 million. Funding will be provided by the Government of India and A.I.D. as follows:

Government of India

- Office space
- Five analysts for the IOMED staff

A.I.D.

- 24 months of long-term technical assistance to IOMED

- 12 months of short-term technical assistance to IOMED to assist in setting up administrative data procedures and in developing low-cost studies

EVALUATION SCHEDULE. The evaluation schedule and budget are included in the Project Paper. The results of the data collection and analysis of goal-, purpose-, and output-level data will be available to evaluation teams to provide an empirical basis for the mid-term and final evaluations.

4. PAKISTAN: POPULATION WELFARE PLANNING PROJECT (391-0469)

USERS OF THE INFORMATION. The major users of the information will be the Chief Executive and senior management at the Population Development Center (PDC), Population Welfare Division (PWD); the Director General for the Logistics System and Contraceptive Supplies, PWD; the Director, National Institute of Technical Research (NITR), PWD; the Director for Program, Training, and Education, PWD; the Planning Unit of the Population Welfare Program (PWP); and the relevant USAID project and program officers.

INSTITUTIONAL LOCUS. One major objective of this project is to strengthen the data collection, analysis, and feedback capabilities of the Population Welfare Program (PWP) as a whole. Therefore, staff in the Population Development Center (PDC) have been designated to serve as data collectors, analysts, and evaluators of the entire program. The team leader will work with his or her PWP counterpart to ensure that a sufficient number of these staff serve as the data collectors, analysts, and evaluators for the A.I.D. project. Special technical assistance will be provided under the project to assist this core group; to ensure that data collection, analysis, feedback, and evaluation of the project is proceeding as planned; and to upgrade the skills of this group if needed.

PROJECT GOAL, PURPOSE, AND OUTPUT QUESTIONS, INDICATORS, AND DATA COLLECTION METHODOLOGIES. The data collectors at the Population Development Center will examine the following questions during implementation. Indicators and methods are identified below.

Project Goal. The goal of this project is to reduce the rate of population increase from 2.97 percent to 2.6 percent by the end of this project.

- Goal-level question: To what extent is the rate of population growth decreasing? What is the likelihood that the rate of population growth will decrease to 2.6 percent by the end of the project?
- Indicators: Population growth rate, crude birth rate, and contraceptive-use prevalence by married couples.

- Data collection methodology: Information on the crude birth rate and population growth rate will be taken from Government reports and maintained in the administrative records of PDC. If these data are not maintained in Government administrative records, the necessary surveys will be undertaken under this project. Contraceptive prevalence surveys will be used to collect the needed data on contraceptive use. The technical assistance team leader will appoint one person on the staff to ensure that the contraceptive prevalence surveys are carried out at the intervals stated in the Project Paper, that data on crude birth rates and population growth are collected, and that all these data are recorded in administrative records. This individual will also be responsible for ensuring that these data are analyzed and presented in a report to the users on a regular basis.

Project Purpose. The purpose of this project is to strengthen the population planning, evaluation, research, motivational, and logistic capabilities and performance of the Government of Pakistan.

- Purpose-level question: To what extent have the population planning, evaluation, research, and logistic capabilities of the Government of Pakistan improved since this project began?
- Indicators: Data generated by program studies and surveys for planning purposes, numbers of trained staff at PWD Centers, the existence of and adherence to a manpower or staffing plan, and development and fulfillment of work plans and objectives by these organizations.
- Data collection methodology: The data collection method to be used for generating purpose-level data will be routine record keeping. By tracking this information on a yearly basis, a trend analysis can be undertaken to ensure that reasonable progress is being made. Data on purpose-level indicators are not currently a part of administrative records. To gather these data and ensure their maintenance in administrative records at the various organizations, the team leader will meet with the program directors of each organization (PDC, NITR, Logistics System) to identify the type of data and records necessary for monitoring institutional development. These data will be specified when a more comprehensive data collection plan is developed during the first year of the project. The team leader will obtain the services of local researchers to prepare an annual report on this topic to the users.

Project Outputs. The outputs to achieve these objectives will be (1) improved training and data processing and contraceptive distribution capabilities within the involved organization, (2) national contraceptive

prevalence surveys and smaller scale evaluation surveys, and (3) a warehouse and research facility.

- Output-level questions: The key output question is, To what extent is project training in all areas (research, logistics, data processing) contributing to increased knowledge, skills, and capabilities of those trained?
- Indicators: Expanded staff capabilities and competency, as demonstrated by increases in the skills and technical knowledge of those trained.
- Data collection methodology: New procedures will be developed to collect and maintain this information as part of PDC's record system. The team leader will appoint one person on the staff of PDC to ensure that appropriate pre/post tests of trainees' knowledge and skills are administered at intervals throughout the project. This information will be provided to the users to determine if and how the training courses should be modified. In addition, the team leader will appoint one or two staff in the monitoring and evaluation unit of PDC to gather and analyze data on other output achievements and prepare a monitoring report for the users every 6 months.

SPECIAL STUDIES. A special study of the cost-effectiveness of the population program of the Government of Pakistan will be undertaken and funded by A.I.D. toward the end of this project. The study will attempt to calculate the cost of averting a birth -- the conventional measure of cost-effectiveness -- by calculating the number of births averted over a 1-year period.

The methodology which will be used is roughly as follows: (1) the number of active users of contraceptives is calculated, by contraceptive method; (2) coefficients of the use-effectiveness, derived from international data, are used to derive a measure known as "couple years of protection" (CYP); (3) the CYPs for all methods are then aggregated to provide a single estimate which can be converted into an estimate of the total number of births averted; and (4) this figure is then divided by the total cost of the program to produce the final estimate of the average cost of averting a birth. The results of this study will be provided to the users and the PWP Planning Unit to determine whether the program can be made more cost-effective.

FEEDBACK. It is the responsibility of the team leader and of the A.I.D. project data collectors, analysts, and evaluators on the staff at PDC to ensure that the results of project data collection and analysis are communicated in a timely, understandable, and actionable format to the users of the information and to the PWP Planning Unit so that timely modifications and improvements in project implementation can be made.

BUDGET. Approximately 2 percent (US\$500,000) of total project costs of US\$25.6 million has been set aside for data collection, analysis, and short-term technical assistance. Funding will be provided by the Government of Pakistan and A.I.D. as follows:

Government of Pakistan

- Office space at the PDC for the monitoring and evaluation unit
- Ten staff for the monitoring and evaluation unit to serve as data collectors, analysts, and evaluators

A.I.D.

- 36 months of long-term assistance by the team leader to the unit
- Hand calculators for data tabulation

EVALUATION SCHEDULE. The evaluation schedule and budget are set forth in the Project Paper. The results of the data collection and analysis on the questions of (1) the population growth rate and contraceptive prevalence rate; (2) growth of the PWP's capabilities in planning, monitoring, evaluating, and conducting research and logistics; and (3) the success of the training program in improving trainees' skills and knowledge will be available to provide an empirical basis for the findings and recommendations of the mid-term and final impact evaluations.

5. BURMA: PRIMARY HEALTH CARE II (482-0004)
USERS OF THE INFORMATION. The primary users of the information generated by this system will be the Director General of the Department of Health in the Ministry of Health, the Director of Public Health, Deputy Directors, Division/State Health Directors, and the relevant USAID project and program officers. This information will also be planned with and made available to the volunteer health workers (VHWs) and representatives of the Village Tract People's Council.

INSTITUTIONAL LOCUS. The institutional locus of the project's built-in data collection, monitoring, and evaluation system is the Health Department's Information Service. Staff from the Information Service will be responsible for training village health workers (VHWs), Rural Health Center staff, and Division/State staff in procedures for data collection. Supervisors will be responsible for day-to-day supervision of data collectors and for ensuring that forms are filled out accurately, completely, and on time.

PROJECT GOAL, PURPOSE, OUTPUT QUESTIONS, INDICATORS, AND DATA

COLLECTION METHODOLOGIES

Project Goal. The goal of this project is to reduce morbidity and mortality caused by diarrheal diseases, malnutrition, selected infectious diseases, and improper medical care of children under 5 years old and their mothers.

- Goal-level question: To what extent have morbidity rates declined among children under 5 years old and their mothers?
- Indicators: Percentage change each year in morbidity (incidence per 1,000) from diarrheal diseases, moderate and mild malnutrition (by age), and neonatal tetanus, as well as the number of newborns entering the surveillance system (number/1,000).
- Data collection methodology: The project calls for the development of an improved information system that will provide the Health Department with information needed to monitor project progress, to manage the project effectively, and to plan further programs. To ensure that this information system is a useful management tool, the overall approach used will be a rapid appraisal/feedback system through which members of the user group receive information on critical indicators (both process and outcome) every 6 months. This approach will allow for continual analysis of trends toward achievement of project objectives to ensure that reasonable progress is taking place. In this way, problem areas can be identified and corrective action initiated as they arise.

Information on the indicators listed above is not currently a part of the Department of Health's administrative records. As part of this project, village health volunteers will be trained to fill out the appropriate forms to report this information regularly to the Department of Health. The Department of Health will then forward this information every 6 months to the monitoring and evaluation unit for analysis. The monitoring and evaluation unit will analyze the data and provide the results of the analysis to the users every 6 months.

Project Purpose. The purpose of this project is to expand village volunteer health services and to improve the quality of these services.

- Indicators: Indicators of expansion are number of community health workers (CHWs), auxiliary midwives (AMWs), and traditional birth assistants (TBAs) trained, equipped, and deployed; and percentage of villages and village tracts with CHWs and AMWs. Indicators of improvements are change in overall village sanitation, including number of latrines and use/results of sanitation checks; frequency of and attendance at personal hygiene lectures; number of immunizations, curative treatments, and total patients per VHW; for

the AMW, number of prenatal visits, percentage of infants/children in regular weighing programs, and percentage of infants/children having diarrhea.

- Data collection methodologies: Data on the indicators listed above will be collected on a continual basis as part of the project's built-in data collection, monitoring, and evaluation system. The methods used to generate this information will be a combination of simple record keeping, observation, and interviews using a structured questionnaire. The information will be collected by selected Division/State staff, VHWs, and Rural Health Center staff. The Department of Health's Information Service, with assistance from the technical evaluation/information specialists, will be responsible for training data collectors and supervising the effort, preparing simple data collection forms, analyzing the data, and preparing the findings that will be included with output-level information in a biannual report.

Project Outputs. The project's outputs will be modifications and improvements in existing health care services through better trained, equipped, and supervised volunteer health workers and community programs.

- Output-level question: To what extent has the number of trained VHWs increased, by type of worker? How many villages are now covered by trained VHWs? What improvements have been made in the training of VHWs?
- Indicators: Average number of days worked by a VHW over a 6-month period; number of VHWs trained (by type): (1) pre-service and (2) in-service; additional material included in training, such as diarrheal disease and weight surveillance; percentage of VHWs who have received initial supply kits after graduation; average number of days that a VHW works without a full supply kit during a 6-month period; and number of additional villages covered by trained VHWs every 6 months.
- Data collection methodology: This information will be collected every 6 months by selected Division/State staff, VHWs, and Rural Health Center staff as part of the project's built in monitoring, data collection, and evaluation system. With the assistance of the technical evaluation/information specialists, the Department of Health's Information Service will be responsible for developing simple data collection processes, analyzing the data, and preparing the findings in a format useful for effective project management. Furthermore, the Health Department's Information Service will also be responsible for preparing the final written document containing the findings and for disseminating copies biannually to members of the user group.

SPECIAL STUDIES. Some goal- and purpose-level questions require

more in-depth investigation and studies. Following the analysis of data and trends, managers will want to know which factors are responsible for variations in morbidity by district or province. Similarly, they may want to learn why VHWs are more effective in some areas than others. To answer these questions, rapid, low-cost studies will be undertaken in the districts in question. Two public health workers will write a report based on interviews with VHWs and project participants, to be completed in 6 weeks. In addition, a series of special studies will be conducted on both operational and technical subjects to provide the Department of Health with information to manage the program more effectively. Subject areas may include financing, private sector roles, cost-efficiency, and workload evaluation.

FEEDBACK. The contractors providing technical assistance to the Health Information Service will be responsible for developing a plan that ensures that data are collected, properly analyzed, and provided in an actionable format to the users identified above.

BUDGET. About 1.5 percent (US\$150,000) of the total US\$10 million A.I.D. funding for this project has been set aside for data collection, analysis, and monitoring and for two project evaluations. Funding will be provided by the Government of Burma and A.I.D. as follows:

Government of Burma

- Office space for the monitoring and evaluation unit of the Department of Health
- Staff
 - Ten full-time staff persons for the monitoring and evaluation unit
 - Appropriate numbers of staff to fill out administrative data forms in each district to be designated and trained

A.I.D

- 18 months of long-term technical assistance to the monitoring and evaluation unit
- 6 months of short-term technical assistance to assist the monitoring and evaluation unit in training and data collection tasks
- Hand calculators for each district

EVALUATION SCHEDULE. The evaluation schedule and budget have been set forth in the Project Paper. The results of the data gathering and analysis of the indicators listed above will be available to provide an empirical basis for the findings and

recommendations of the mid-term and final evaluations.

6. INDONESIA: PRIVATE SECTOR MANAGEMENT AND DEVELOPMENT PROJECT (497-0345)

INTRODUCTION. Private sector development in Indonesia is constrained primarily by a lack of trained managers, which can be attributed to insufficient training efforts and capabilities of the Government, private companies, and institutions. Only 1 percent of the work force is in management or supervisory positions, and two-thirds of these are government employees. One private sector organization with the capability to address this problem is the Institution for Management Education and Development (LPPM), recognized as one of the best management development institutions in Jakarta. The Private Sector Management Development project will offer a 6-year institutional development package to LPPM as a beginning effort to meet private sector management training demand. As indicated in the Project Paper Evaluation Plan, "the critical measure of project success is the extent to which LPPM develops and expands as an institution."

USERS OF THE INFORMATION. The users of the information will be the LPPM coordinator, managing director, and the project steering committee. The five steering committee members will work with USAID and the technical assistance consultants to develop a management information system (MIS) for data collection, monitoring, and evaluation of the project by the end of the first planning consultancy (project month 9).

INSTITUTIONAL LOCUS. The information generated by the MIS will be gathered by the Research Division and provided in quarterly reports to the project steering committee and USAID. The long- and short-term consultants will assist the LPPM staff in developing an MIS for both the project and the institution. In addition, the project will provide a short-term consultant to assist Research Division staff in data compilation, analysis, and extrapolation of useful findings from various data for the quarterly report.

PROJECT GOAL, PURPOSE, AND OUTPUT QUESTIONS, INDICATORS, AND DATA COLLECTION METHODOLOGIES. LPPM Research Division staff will examine the following questions during implementation. Indicators and methods are identified below.

Project Goal. The goal of the project is to expand the capacity to produce private sector business managers in Indonesia.

-- Goal-level question: analysis, what is the percentage increase in managers graduated from LPPM annually and the number placed in management positions in the private sector over the life of the project? By comparison, what is the percentage increase in managers graduated annually from other institutions and placed in management positions in the private sector?

- Indicators: (1) The number of managers graduated from LPPM and comparison institutions, (2) the percentage of these placed in management positions, and (3) national statistics on the percentage of the national work force in supervisory or management positions.
- Data collection methodology: Administrative records will be used to determine the number of LPPM and comparison institution graduates. Data (from 5 years before the project through 5 years after the project) will be compared on a yearly basis to determine any increase. Similarly, through followup surveys sent to each graduate 6 months after training, graduates will be tracked to determine how many entered management/supervisory positions. If national statistics on management manpower levels are not available periodically, LPPM's Consulting Division will submit a proposal to the Indonesian Government to amass and report such statistics (via sampling) regularly. These data will be collected by LPPM staff and provided in an annual report to the users identified above.

Project Purpose. The purpose of the project is to contribute to the institutional development and expansion of the LPPM.

- Purpose-level questions: How has LPPM further developed and expanded its institutional capacity as a result of the project? Has the staff been trained appropriately to achieve the purpose? To what extent are other institutions offering management courses through LPPM assistance? How has the Research Division of LPPM been restructured, and is it more effective?
- Indicators: (1) Development of institutional and manpower plans and adherence to the plans, (2) development of a management information system, (3) staff training successfully completed at appropriate levels, (4) increases in consulting contracts and consulting staff, (5) increases in the staffing and output of the Research Division, and (6) the number of other institutions offering management training as a result of LPPM assistance.
- Data collection methodology: New procedures will be developed for use by Research Division staff in collecting and maintaining this information as part of the LPPM's management information system records. They will also be responsible for analyzing the data, preparing quarterly reports, and forwarding copies of this report to the users.

Project Outputs. The outputs involved in achieving these objectives are (1) a revised institutional plan and management information system, (2) trained professional staff, (3) an expanded consulting program, (4) an established outreach program, and (5) a restructured research program.

- Output-level questions: The two most important output questions are (1) is training contributing to enhancing

the capacity of professional staff (pre/post test results), and (2) to what extent has the consulting program expanded?

- Indicators: For enhanced capacity of the professional staff, indicators are (1) number of staff trained and types of degrees earned, (2) results of in-house and short-term training, (3) number of new consulting staff and percentage increase in awarded bids, and (4) number of research staff and percentage increase in research output. For the outreach program, indicators are (1) number of institutes assisted and (2) number of graduates and percentage of these placed.
- Data collection methodology: The new procedures developed for the MIS will include plans for the collection and recording of all information items listed above. Staff in the Research Division will be responsible for ensuring that this information is collected, recorded, analyzed, and presented in a quarterly report. Staff training and consulting activities will be measured using simple administrative records in the Research Division. Pre/post tests will be administered to all trainees to determine the results of training.

FEEDBACK. As the management information system becomes operational and begins to produce data, the Research Division Director will ensure that the quarterly reports are completed and reported to the users of the information. In addition, the first several reports produced should be reviewed by USAID evaluation staff for appropriateness of data and overall efficiency as an evaluative exercise. The steering committee and LPPM directors should have more frequent access to data analysis results so that modifications and improvements in project implementation and the LPPM plan can be made in a timely way.

BUDGET. Approximately 2 percent (US\$120,000) of the US\$6.4 million total project costs should be set aside for data collection, analysis, short-term evaluation specialists, and two project evaluations. Funding will be provided by the Government of Indonesia and USAID as follows:

Government of Indonesia

- Office space in the LPPM Research Division for the monitoring and evaluation unit
- Five staff from the LPPM Research Division to work in the project's monitoring and evaluation unit USAID
- 24 months of long-term technical assistance, to be devoted, in part, to the monitoring and evaluation unit
- 6 months of short-term technical assistance to help the LPPM staff in developing a monitoring and evaluation unit for the project and to provide direct assistance to the unit in data collection and analysis activities

EVALUATION SCHEDULE. The results of the data collection and

analysis will provide an empirical basis for the findings and recommendations of the mid-term and final impact evaluations. The data which will be most useful for the evaluation will pertain to (1) the increase in management/supervisory positions in the work force, (2) the institutional growth of LPPM, and (3) the institutional growth of other institutions as a result of the outreach program.

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